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MAY 2001

CHOICE

Independent information for smart consumers

Electronic pest zappers

DO THEY WORK?

The lowdown on home entertainment

Why the ham went off ...

Home security

DIY FOR HALF THE PRICE

Tests

DVD PLAYERS
DISHWASHERS
COLUMN HEATERS
SHOWER GEL

New-look CHOICE

We hope you noticed — CHOICE has a new look this issue. We've redesigned the cover and the inside pages to make the information even easier to find and use and to provide more of it, as well as keep the magazine looking modern and attractive.

There are a couple of new regular pages as well. *Appetisers* (see page 8) will keep you up-to-date with developments in food and give tips on everything from what to do with mouldy cheese to how to make tasty meals without salt.

The second new page, *www.choice.com.au* (see page 50), will let you know what's on our website that you won't find in the magazine — CHOICE subscribers have free trial access to it. Some items lend themselves better to the web medium than to print, such as the many interactive databases there, where you type in your own requirements for a particular product and the database finds the model or type that best meets them.

For example, in this issue we unveil five databases for new and used cars available at www.choice.com.au. You can find out about the safety, cost of repairs, features, price, etc, of hundreds of models, and you can search easily by category or model.

We'd love to get feedback from you about the magazine's new design. In particular, if you find any aspects of it that make the information harder to find or use, please let us know and we'll try to fix it. I hope you enjoy this issue.

Jane Mackenzie, Editor

CHOICE

is published by the Australian Consumers' Association

YOUR LETTERS

We welcome the letters you send us — please always include a daytime telephone number so we can contact you quickly if we want to follow up your letter. We're sorry we can't personally answer every letter we receive, but we do use them in our research. Thanks for taking the time to keep in touch.

CONTACT US

WRITE to us at CHOICE, 57 Carrington Road, Marrickville 2204.
PHONE us on (02) 9577 3399.
FAX us on (02) 9577 3355.
EMAIL us at ausconsumer@choice.com.au.
WORLD WIDE WEB www.choice.com.au.

CHECK OUT OUR WEBSITE

www.choice.com.au

If you're a current CHOICE subscriber you can have free trial access to our website. Just call Consumer Services on (02) 9577 3399 and have your email address ready. As well as finding all the articles in CHOICE there, you can use COMPARE A PRODUCT (type in your requirements and let the database find the right model for you), participate in our forums, catch up on our latest campaigns, tell us what you think about us and order books or single reports from our shop.

REQUEST A TEST

If you've seen something you'd like us to test, email us at requestatest@choice.com.au or call us on (02) 9577 3399.

The Australian Consumers' Association is a non-profit, non-party-political organisation, established in 1959 to provide consumers with information and advice on goods, services, health and personal finances, and to help maintain and enhance their quality of life. It's a Council member of Consumers International.

We are completely independent. All the products we subject to full testing and comparison are purchased by us in the marketplace; sometimes to get the latest model we may buy directly from a manufacturer where we can select a random sample ourselves. We never accept gifts from manufacturers or retailers; we sometimes borrow samples, especially of new products, for quick reviews or pre-evaluation before we can buy in the marketplace. We are not beholden to any commercial, government or union interests, and we don't accept advertising, paid or unpaid. Our income is derived from the sale of CHOICE and our other publications and products.

We test and rate products and services. Our ratings are usually based on quality without regard to price, and are derived from lab tests, expert judgments and reader surveys. If a product is high in quality and relatively low in price, we deem it a **Best Buy**. A rating applies only to the brand and model tested, not to other models sold under the same brand name, unless so noted. Financial information in CHOICE is of a general nature, and is not intended to be advice on individual investments.

We represent and act in consumers' interests. We lobby and campaign on behalf of consumers to promote their rights, to influence government policy, and to ensure consumer issues have a high profile in the public arena.

Membership. Subscribers can become voting members of the Consumers' Association on application. Voting membership costs $89.10 for a year, which covers your subscription to CHOICE with free access to CHOICE Online and a further subscription to our policy and campaigning magazine, *Consuming Interest*.

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Photo: Kent Mears

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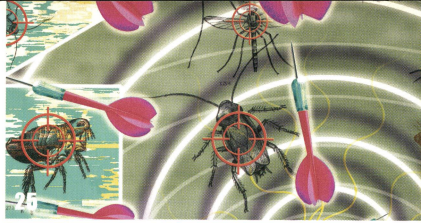
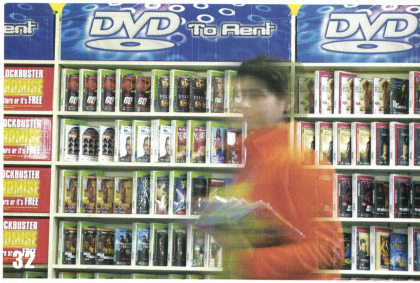




Flu shot season

Now's the time to get a flu shot, even if you had one last year. Viruses mutate, so the World Health Organization and Australian public health officials change the influenza A and B cocktail each year to target the latest lurgies.

National health guidelines recommend you get vaccinated each year if you:

- Are 65 or over (or 50 or over if you're Aboriginal or a Torres Strait Islander).
- Have a chronic heart, lung, kidney or metabolic disease, such as diabetes mellitus.
- Are having immunosuppressive therapy.
- Have severe asthma.
- Are likely to be in your second or third trimester of pregnancy during the flu season.
- Live in a nursing home or long-term care facility.
- Work in a nursing home or long-term care facility or care for people who are in increased risk groups.

The guidelines also recommend children six months and older with congenital heart problems, chronic disabilities such as diabetes and cystic fibrosis, or having immunosuppressive therapy are vaccinated each year. Children and teenagers on long-term aspirin therapy should also get an annual flu vaccination.

The flu vaccine has some, mostly mild, side effects, such as soreness around the vaccination site, and a few people may get flu-like symptoms: fever, fatigue and muscle soreness, or in some cases reactions such as hives, asthma and breathlessness. The vaccine has also been associated with Guillain-Barré syndrome — a very rare and generally temporary nerve disease that causes muscle weakening — but this is extremely unusual. The risk of getting pneumonia from not having the vaccine is much greater.

You shouldn't have the vaccine if you're allergic to eggs, if you already have a fever or if you've had Guillain-Barré syndrome.

Once you've had the shot, it takes about two weeks for your body to develop immunity to the viruses — which is why you need to get your shot in autumn before the flu season starts.

One shot is enough to provide protection for adults for up to a year, but children under nine who've never been immunised against the flu should have two shots at least four weeks apart.

Anyone can get the vaccination on prescription from a GP, but the cost depends on your age or health status. If you're over 65 (or 50 if you're Aboriginal or a Torres Strait Islander), or you're an Aboriginal or Torres Strait Islander aged between 14 and 49 with a chronic disease, you can get a free vaccination at your local GP or some health centres under the Commonwealth Government's immunisation scheme. If national health guidelines (see left) recommend you have an annual shot but you aren't covered by the Commonwealth's immunisation program, the vaccination costs $17.47 ($3.50 if you have a concession card). And if you're healthy but want to be vaccinated anyway, the jab will set you back up to $21.90 (or $3.50).

For more information talk to your GP or local health centre, call the Immunisation Hotline on 1800 671 811 or check the Immunise Australia website at http://immunise.health.gov.au.

- **NOTE:** If your child or teenager gets the flu, health professionals recommend you use ibuprofen or paracetamol to relieve the symptoms. Don't use aspirin: using it to relieve flu and chickenpox symptoms in children is associated with Reye's Syndrome — a rare but potentially fatal disease that causes brain swelling and liver problems. Talk to your GP if you're concerned.

EXPENSIVE CONVENIENCE

The convenience of switching on your TV or stereo system with the remote, or having your cordless phone, answering and fax machines ready to help you communicate, costs you and the environment dearly.

CHOICE recently conducted a study of standby power consumption, in co-operation with the Australian Greenhouse Office (AGO) and state and territory governments, which revealed that on average more than 11% of a household's electricity consumption goes towards appliances not performing their main task.

Late last year, we visited the homes of 64 CHOICE readers and measured the power consumption of all the electric and electronic appliances we could find, except fridges and hot water systems. We measured the consumption on standby and also when the appliances were

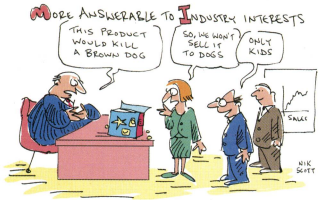
POWER CONSUMPTION OF APPLIANCES ON STANDBY OR SWITCHED OFF

(As a rule of thumb, each watt of power consumption will add about $1 to your yearly electricity bill.)

Appliance	Average no. per household	Mode	Consumption range of all appliances tested (W)	Average consumption per appliance (W)
TV	1.9	Standby	<1–29	9.6
VCR	1.2	Standby	3–18	7.9
Computer	0.7	Off	0–12	2.0
Computer monitor	0.7	Off	0–5	1.2
Computer speakers	0.6	Off	0–7	2.1
Printer	0.6	Off	0–13	2.0
Washing machine	1.0	Off	0–11	2.0
Dryer	0.5	Off	0–4	0.4
Microwave oven	0.9	Standby	2–11	3.9
Cordless phone	0.5	Standby	1–9	2.7
Fax machine	0.2	Standby	3–16	8.2
Answering machine	0.4	Standby	2–5	3.3
Audio/video (A)	5.0	Standby	0–50	9.5
Audio/video (A)	5.0	Off	0–25	1.3
Battery-charger (B)	3.5	Standby	0–15	1.9

(A) *Other than TV and VCR. For example, integrated stereo systems or those made from separate components, DVD players and pay TV decoders.*

(B) *Chargers for cordless and mobile phones, shavers, electric toothbrushes, etc. Includes data also listed separately for cordless phones.*


MORE ANSWERABLE TO INDUSTRY INTERESTS
THIS PRODUCT WOULD KILL A BROWN DOG
SO, WE WON'T SELL IT TO DOGS
ONLY KIDS
SALES
NIK SCOTT

Who's looking after your food supply?

We'll get more than a new mouthful of acronym with the government's latest proposed changes to our food regulator. The changes to the Australia New Zealand Food Authority (ANZFA), which will become known as Food Standards Australia New Zealand (FSANZ) (pronounced fiz-anz), will be debated in federal parliament in the coming months. If the bill is passed as it currently stands, food regulation decisions will be based on free-trade and industry interests rather than on consumer concerns and issues of public health and safety.

Under the proposal the food regulator will have increased powers and will be more answerable to industry interests — formalising the less overt industry focus CHOICE has criticised for years. The bill opens up membership of the Ministerial Council, which oversees food regulatory decisions, to agriculture, trade and industry ministers, leaving our health ministers to battle alone to protect public health and safety. This influence will also be echoed on the board of FSANZ, with the possibility of consumer rights representation being reduced in favour of members with a background in small business, international trade, primary food production or from the food industry itself.

In short, it's bad news for consumers: less representation, less say and less information about what's happening to our food. CHOICE will be working with other concerned organisations to ensure the focus on food is about our health and safety — not about chasing export dollars.

SWEAT STINKS!

For too long, clothing industry outworkers have been a highly exploited but largely invisible workforce. Typical pay rates range from $2 to $5 per hour, with 12 to 18-hour days fairly common. But poor pay and long hours are only the tip of the iceberg — outworkers (who work at home for a clothing company based elsewhere) are at risk of many other occupational disadvantages and hazards their factory-based counterparts don't always suffer.

A new label has been launched in an attempt to encourage clothing companies to provide better working conditions for outworkers. Clothes made by outworkers (and also factory workers) who are paid the award wage are permitted to carry the *No Sweat Shop* label (below), making it easy for consumers to show their support for companies with ethical labour policies.

When you're shopping for clothes — from underwear and sports wear to evening dresses and suits — look for and buy ones bearing the *No Sweat Shop* label. If you have difficulty finding clothes with the label, tell retailers you want them.

For more information visit our website (www.choice.com.au, and type 'sweat shop' in the search box) or contact Marlene Ebejer of the Council of Textile and Fashion Industries of Australia on (03) 9866 8962.

switched off, because some appliances use power even then — overall making more than 2500 measurements. We also noted in which of the two modes the owners usually keep an appliance.

The outcome was an average of almost 87 W of constant consumption per household, or about 760 kWh per year — worth around $95. As most electricity in Australia is generated in power plants burning fossil fuels, that consumption creates about 5.3 million tonnes of greenhouse gases.

The main culprits include:

- TVs and VCRs use a lot of energy in standby mode, though they're improving (some modern TVs use less than 1 W).
- Other audio and video equipment, such as stereo systems and pay TV decoders, also use a lot of power on standby, and don't seem to be improving.
- Computer equipment (printers in particular) and some other appliances use small amounts of power even when switched off. That consumption often doesn't serve any purpose and is often due to poor product design.

For more detailed information on the findings, go to www.choice.com.au and search for 'standby'. You can also visit the AGO's website on www.greenhouse.gov.au/energyefficiency/appliances/standby/index.html.

What you can do

The government's long-term goal is for no appliance to use more than 1 W per year while on standby. In the meantime:

- If possible, switch off appliances instead of leaving them on standby, particularly your TV and stereo system.
- If possible, switch off at the wall or unplug appliances you only use occasionally — for example, your computer equipment or the chargers for your mobile phone and power tools.
- When shopping for office equipment such as a computer or printer, look for the *Energy Star* label. It guarantees a certain reduction in standby power consumption — for example, by automatically switching into a 'sleep' mode. Make sure you enable the function when installing the appliance.

The scheme will be expanded to home entertainment equipment later this year. For more information, see www.energystar.gov.au.

Money Isn't All You're Saving

NEW HEALTH READER WEBSITE

The CHOICE *Health Reader* has now gone online. You can get the same information as in the magazine, complete with archives (back to Jan/Feb 2001) and a search function — find the articles you want by category, keyword, etc.

Access is free to current *Health Reader* subscribers; others can join up for $7.40 per quarter. Call our Consumer Services on (02) 9577 3399 to register for free access or go to www.healthreader.com.au to subscribe.

Herbal help for PMS?

For women who suffer from it, pre-menstrual syndrome includes the classic symptoms of unstable moods, persistent irritability or anger, anxiety, hopelessness, rapid tiring, changes in eating behaviour, tender breasts, a feeling of bloating and so on.

In a recent trial in Germany, 178 women for whom these symptoms were severe enough to create noticeable difficulties in their daily life tried out a traditional remedy: the chaste plant (*Vitex agnus castus*).

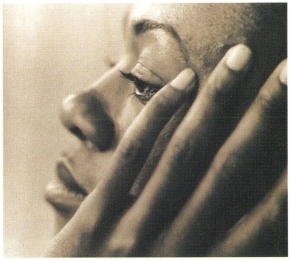
A small tree native to southern Europe and western Asia, it's reportedly been used for centuries for PMS, irregular periods, fertility, haemorrhaging, fevers and headaches. It's called 'chaste' because it's also believed to inhibit the libido in men: another name for it is 'monk's pepper'.

Half the women in the trial took agnus castus tablets (one 20 mg tablet a day) and half placebo tablets; neither they nor the researchers knew which was which. The women completed a questionnaire about their symptoms at the beginning and end of the trial, which extended over three menstrual cycles.

After this time, the women who'd taken the agnus castus tablets had measurably milder symptoms, with the biggest improvements being in levels of irritability, mood swings, anger, headache and breast fullness. There was no difference in bloating or other symptoms.

Overall, 52% of the women had a 50% or greater improvement in their symptoms, compared to 24% who took the placebo.

As with all herbal treatments, it's important to know what you're buying — effectiveness will vary depending on the strength of the extract and the part of the plant used. The fruit extract in the trial was in ethanol (60% pure) and the extract was standardised for the concentration of casticin, one of the flavonoid chemicals in the plant. Flavonoids are plant compounds that mimic the structure, and perhaps mildly the activity, of sex hormones.



As always if you're using herbal products as well as any conventional medicines, tell your doctor in case there are any side effects.

CHOICE *Health Reader* (April 2001) has more on this study, plus other reports on the latest research in nutrition, exercise and other health areas. If you'd like to subscribe, call our Consumer Services on (02) 9577 3399.

WORLD CONSUMER SNAPSHOT

Fly me to the moon...

Looking for land, but in the market for something a little different? According to *Consumer Choice* from Ireland, the British Safeway supermarket chain has been selling plots of land on the moon for less than £20 an acre (around $60). Safeway believes the legal title to the moon is valid, but apparently the UN Office for Outer Space Affairs in Vienna disagrees — and Safeway began selling months before April 1!

Faulty figs

When *Test* magazine from Germany tested dried figs it found almost a third of samples contained aflatoxins, a carcinogenic by-product of mould growth. If you're a dried fig lover don't despair: check them under good light first, and don't eat them if the surface is mottled black, uniformly black or dark green. And if you've already bitten into one and it doesn't taste like a dried fig should, spit it out.

YANKEE DOODLE DANDY

"Anyone designing computers that mimic the way the human brain links ideas will now have to pay Hugh Harlan of California for the privilege."

So says the February 3, 2001, edition of *New Scientist*. According to the magazine, US patent law now allows the patenting of 'schemes', with Hugh obtaining the patent (US 6031537) for computers that "think" like people.

And Nintendo has applied for a world patent on "a method of creating computer game characters ... based on genetics", where "evolvable" characteristics can be used to create completely new characters. Another good idea gone!

A UK firm has a patent (GB 2351061) for a cigarette packet that talks every time you open it. It plays a short recording of a health warning or music — March 7's *New Scientist* suggests a funeral march.

A fridge that'll cook and wash up — or better still, load and unload the dishwasher? Now, is there a patent in there somewhere?

Go to **www.choice.com.au** and type 'patent' into the search box to find out what CHOICE'S policy is on the issue of patenting business methods.

YOUR LETTERS

Automatic replay useful

In the recent test of hifi VCRs in the Jan/Feb 2001 edition, you described the ability to automatically replay the same tape as a useless gimmick. This is not so.

I have worked as a volunteer for the Australian Railways' Historical Society Museum in Williamstown, Victoria. Part of the museum display was to show railway-related videos. My job was to put in the video for the day and set it to replay continuously.

It's normal for CD players and audio cassette players to have automatic replay for the same reason.

In the current age of microprocessors there's no extra manufacturing cost to program these extra features. A typical VCR will have one or several complex microprocessors to control its tasks of recording, playback and timer setting. Adding an additional, simple feature to these processors is quick and cheap.

Mark Morey
Palmerston, ACT

Thanks for the example — your experience shows why people might find such a feature useful. And our article did include another example of a potential use for it: see page 45 of the Jan/Feb 2001 issue.

Write for results

Last year I bought an exercise machine that was advertised on television — my order was a phone order to a marketing firm.

The machine was excellent except for one aspect, which made it unusable for some exercises. There was no foot strap, although one had been shown in the advertisement.

I rang the marketing company and their response was more or less "too bad". I rang several times and was told that:

a) My feet are too small (but how did they know my foot size?).

b) I should do the exercises some other way.

c) The machine doesn't come with a foot strap — that's another model.

d) You've already been told we will do nothing for you.

I asked if I could buy a strap anyway but was told no, it's not available. I got nowhere.

Then I bought your book *Put It In Writing*, and I sent a letter. The response was just amazing. I was sent a packing slip. All I had to do was wrap the machine and leave it on my verandah. It was removed and the refund money was put into my account without any further problems. Thank you, indeed.

Judi Millar
Doncaster, Victoria

We're glad the book helped you get a satisfactory result.

The CHOICE Book Put It In Writing *contains 120 letters, written by a lawyer, that you can adapt to suit your problem — as Judi did. Advice about your rights, a list of contacts and a glossary of terms is also included.*

If you're interested in ordering a copy, you'll find it in the book catalogue you received with this issue.

With its new flip-top (right), The Body Shop 'Juice It' shower gel isn't quite as easily confused with a soft drink. The labelling will be modified soon too, changing the image even more.

RHONDA TWAITE

Not so juicy

After your report in December 2000 and further discussion with CHOICE, I wanted to update you on current and planned changes for The Body Shop 'Juice It' range of products.

Due to consumer concern expressed about this range and our commitment to customer safety both here and around the world, we've undertaken some changes to the packaging.

In Australia we've introduced a two-phase change process. As the caps have been the cause of most concern, phase 1 is the replacement of the pop-up tops to our generic flip-tops. Phase 2 involves changes to the product labelling by reducing the size of the words 'Juice It' and altering the imagery.

Given the number of cosmetic products housed in packaging adopted from the food industry, we felt consumers were sufficiently educated for us to launch the product range in a responsible manner. However, as a company that values the input of its stakeholders we have a responsibility to respond appropriately to customer feedback, as we've done in this situation.

Thank you for bringing the issue to our attention and giving us the opportunity to respond.

Vickie Burkinshaw
The Body Shop, Mulgrave, Victoria

And thanks to The Body Shop for acting so promptly on our concerns with the shower gel packaging (we got this letter in January and held on to it so it could be published alongside the relevant article. For more on shower gel, and information on how this one rated in our trial, see page 28.) ■

LETTER OF THE MONTH

We want to hear from you — your experiences help our research and often let other readers know about scams and rip-offs. To thank you for writing to us, *Your Letters* awards a prize of a CHOICE book to the 'Letter of the month'. This month's winner, Judy Millar, of Doncaster, Victoria, receives *Saving Spending Splurging*, or any other book of her choice from the book catalogue that came with this issue.

And keep your letters and emails coming about *positive* outcomes following your complaint to a retailer, manufacturer or tradesperson (see last month's *Your Letters*). Address them to 'Thumbs Up' at the address published on page 2.

We're sorry we don't have the resources to answer all your letters personally, and in the magazine we may edit them or print only an extract. See page 2 for how to reach us.

YOU WERE ASKING...

If you have a food-related question you'd like us to address, please send it in to us (see page 2 for the address). Unfortunately we can't answer each one personally, but we'll do our best to answer the most interesting ones on this page.

MOULDY CHEESE TIP

Don't throw that block of cheese out just because there's a bit of mould on it. Cut the mould off at least 1 cm past where it's visible, and you can still eat the rest. However, if you're allergic to penicillin, it's probably safest to throw it away. To prevent shredded or grated cheese from going mouldy after opening, keep it in the freezer.

THE NEW

For years makers of yogurt and fermented milk products have been championing the health benefits of certain bacterial cultures, and now it seems the dairy industry has really jumped on the bandwagon and is adding cultures to even more products.

Mainland Dairies has introduced a cheese that contains additional cultures to those traditionally used in cheese-making. Inner-Balance cheese contains lactobacillus culture DR-20, which the makers claim helps keep your digestive system "naturally balanced". And Dairy Farmers Life brand of milk now contains *Acidophilus bifidus* (AB) cultures, together with added nutrients such as iron, vitamin C and folate.

While the principle of using these 'probiotic' bacteria to keep your digestive system in balance is microbiologically sound, many factors influence their effect, including your age, ethnic background, diet, health and medical history. As well, to have any effect in the gut, the bacteria have to survive food processing, storage, the journey through the acids and enzymes in the stomach and through the small intestine before they can go to work in your large intestine. And they need to survive in numbers of at least a million probiotic bacteria per gram of product to do any good.

TIP

Flavour without salt

It's not news that eating a lot of salt can lead to high blood pressure, which in turn contributes to heart and kidney disease and strokes. If you find food a bit bland without it, try using lots of herbs and spices for flavouring, such as coriander, five-spice powder, star anise, ginger, garlic and chives, or any other herbs or spices that take your fancy.

Canola – dispelling the myths

A CHOICE subscriber recently referred us to an article on canola oil she'd been sent. Its claims were interesting: that canola was produced via genetic modification from the rapeseed plant, is toxic to humans, causes mad cow disease, emphysema and blindness, and is used to make mustard gas.

As usual, we looked for evidence, and can find none to support claims that it causes any diseases, including mad cow disease, or has any other adverse effects.

Canola *was* developed from the rapeseed plant, but through natural plant-breeding methods — you remember, the way new plant breeds were developed for thousands of years before genetic modification came along.

Canola oil was originally developed in response to concerns about the high levels of erucic acid in rapeseed oil. Erucic acid is a toxic fatty acid that occurs in high concentrations in rapeseed. So canola was bred with much lower levels, while still maintaining the high levels of monounsaturated fats, which are good for us.

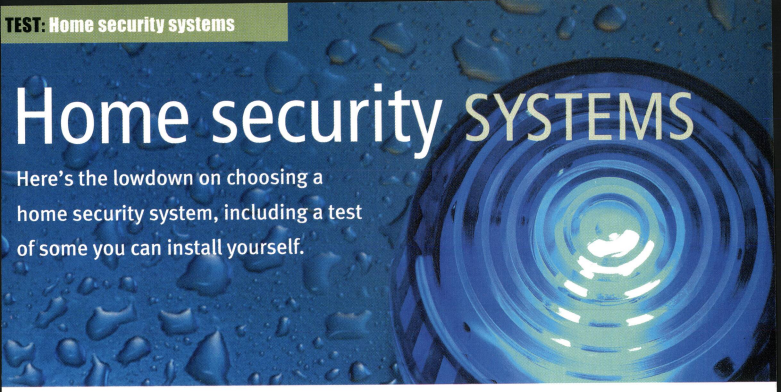
It's worth knowing, however, that a new canola variety is being genetically modified to increase its nutritional value and tolerance to herbicides. If you have concerns about genetically modified food, check with manufacturers to find an oil sourced from crops that haven't been genetically modified.

The article correctly states that rapeseed is a member of the mustard family, which also includes broccoli, cauliflower, cabbage and Brussels sprouts. But rapeseed wasn't used in mustard gas, a volatile, toxic chemical used in the trenches in WW1. It's called mustard gas only because it has a mustard-like odour.

In all, there's no evidence to suggest you should be wary of canola oil. Nutritionally, it's an excellent source of omega-3 fatty acids, and has been shown in many clinical trials to lower LDL cholesterol levels (the type associated with coronary heart disease) as well as total cholesterol. It's a safe and nutritionally sound choice for cooking but, as with any fat, use it in moderation.

Home security SYSTEMS

Here's the lowdown on choosing a home security system, including a test of some you can install yourself.



NRMA Insurance, one of Australia's biggest household insurers, considers alarms the most effective way of protecting your home from burglary, especially in high-risk areas. In 1996–97 only 0.2% of its insured homes with alarms were burgled, compared with 2.3% of homes with no extra security. Accordingly, it offers a 6% discount on policies where an alarm is fitted, and a 15% discount if the alarm is monitored by a security company. Other insurance companies may also offer discounts.

WHAT'S IN AN ALARM SYSTEM?

There are four basic components to an alarm — or home security — system: sensors, output devices, the control unit and the power supply.

- **Sensors**, such as passive infra-red (PIR) motion detectors, pressure mats and reed switches, trigger the alarm, and can also include panic switches and smoke detectors. See *How to protect your home*, page 11, for more.
- **Output devices**, such as sirens, bells, flashing lights and/or a telephone dialler, let you know the alarm's been triggered.
- The **control unit** receives information from the sensors and triggers the alarm if they've been activated.
- The control unit needs a **power supply**, and is usually connected to the mains. Some also have batteries and so are unaffected by power failure.

WHAT TO BUY

AEI Burglar Alarm System for Commercial and Residential Security HA-871 (L 5149)	$358
AEI 8 Zone Alarm System HA-982 (L 5189)	$458

THE BASICS

Obviously some systems are better than others. As a guide, we used the criteria specified by NRMA Insurance to qualify for the minimum insurance discount:

- Intruder detection at or near the main entry points.
- At least one internal siren.
- A strobe light and an external siren (except in home units) that meets the relevant noise control regulations.
- For a house, a minimum of four intruder sensors, including at least two motion detectors; home units should have at least three intruder sensors, including at least one motion detector.
- Connection to mains electricity, with a rechargeable battery for power failure.

YOUR ALARM OPTIONS

Monitored or local

You can rent or buy a **monitored** system that's connected to a security company, with a guaranteed response. They may call you if the alarm's triggered, call the police or send a patrol car around to investigate (for an additional charge). This costs about $1 per day, although one company we rang charged more than $2.

A local (**unmonitored**) alarm relies on the burglar bolting, preferably without your irreplaceable treasures, when the alarm goes off. It might cost more initially than a monitored system but there are no ongoing costs.

Insurance companies give larger discounts for monitored systems, but for a typical household, you're unlikely to recoup the higher cost in lower insurance premiums.

IN A NUTSHELL

- **Alarms are the most effective** *protection against burglary, and some insurance companies offer discounts on premiums if you have one.*
- **Not all systems are equal,** *and for best protection there are some minimum criteria your system should meet — see* The basics, *left.*
- **Two of the DIY systems** *tested could provide the same level of security as a professionally installed system — for less than half the price.*

Wired or wireless

Wired systems involve running wires between the control unit and the sensors and output devices, either through the ceiling or under the carpet — which is not an option in some homes. They're usually cheaper than wireless systems, and you don't have to worry whether batteries are charged (except any back-up ones).

Wireless alarms use a radio signal to link the sensors to the control panel on the alarm. They're easy to install and you can take them with you when you move. On the other hand, batteries need to be maintained and are an additional cost.

Professionally installed or DIY

Unless you're installing a wireless system, the simplest option is to have a security system professionally installed. Get quotes from at least three reputable companies, and make sure they're a member of the Australian Security Industry Association Limited (ASIAL). The association has a referral service in each state and territory — look for it under 'Security systems and/or consultants' in the Yellow Pages — and its members are required to follow a code of practice. ASIAL also has a website: www.asial.com.au.

The cost of a professionally installed system will vary according to the size of your home and the complexity of the system but, as a guide, we had quotes ranging from $1100 to $1500 for a two-bedroom single-storey home for a system that met the requirements listed on page 9. (You may get a discount on the upfront cost of the system if you sign a contract to have it monitored by the same company.)

The other option is a DIY kit. But are they as good as professionally installed systems? We tested them to find out — see page 12.

What to look for

Make sure the security system meets the **minimum requirements** listed on page 9 (*The basics*). For better security and safety, you could also consider:

- One or more **panic switches** for instant alarm triggering.
- A **medical alarm** (for elderly or infirm people).
- One or more **smoke detectors**.
- 24-hour back-to-base **monitoring**, which can notify the base station of break-ins, smoke, personal duress (see below), panic and medical alarm.
- **Personal duress** feature (for monitored systems): if an intruder forces you to deactivate the system, entering a duress code will give the appearance that you're complying, but the monitoring base will register this.
- Even if you don't want monitoring, it can be worth getting a system with a **phone dialler**, so if the alarm is triggered it can call you (or someone else) to let you know. Only one alarm in our test has a phone dialler — the **AEI** 4-zone system (**L 5149**), which can dial two lines.
- Get a system that allows your home to be **compartmentalised into zones** so you can program each zone separately. For example, if you have a two-storey home, you can designate the bottom storey as one zone, and leave it activated at night while your family is sleeping upstairs in a different zone. Or, when everyone is at home, you can have the perimeter (windows and doors) armed, but not the internal space. Both **AEI** models in the test can do this.
- Zones also allow an **instant/delay handover**. For example, you may set up your living room zone so it's triggered instantly when an intruder comes through a window, say. On the other hand, if an occupant of the house enters through the front door zone, the instant/delay handover comes into effect, so that the living room zone goes into delayed-alarm mode instead of instant alarm, giving the occupant time to deactivate it.
- Ability to add **optional accessories**, like additional body heat or motion detectors, pressure mats, reed switches or an extra siren. This can be handy if you want to put an extension on the house, for example, and protect it with the existing alarm system.
- **Battery back-up** — a good feature especially if there's a power failure or it's deliberately cut, so your home's always protected.
- **Single versus multiple triggering**. Alarms can be automatically or manually reset. An alarm that's reset automatically can go off every time it's triggered ('multiple triggering'). It could be a nuisance if you have a pet, say, that's discovered a great new trick to set it off continually. But under most circumstances, it's the preferred system for local alarms. A monitored alarm can be reset manually by the security company after it's responded.

  For local alarms, manual reset means the alarm will only go off once ('single triggering'), and further triggers won't set it off until you get home and reset it. See the table for model details (page 13).
- **Warning stickers** for your windows and door.
- **Test the system** regularly, keep it maintained and if it was professionally installed, get the company to do a professional service at least once a year.

WHAT'S THE BEST SYSTEM FOR YOU?

- If you're handy with electrics, you could consider one of the DIY systems in the *What to buy* list. Otherwise get one professionally installed.
- If you live in a high-risk area, a monitored system may be preferable.
- If you have pets in the house during the day, consider getting a system professionally installed so sensors can be adjusted to ignore them, though sensors suited to pets may be more expensive than regular ones. Cats are a particular problem for alarms, because they can climb, so it's not simply a matter of setting the target height a little higher.
- If you live in a home unit, you're not permitted to have an external siren. Also, a wireless system might be the better option because you won't be able to feed wires through the ceiling. Just make sure it's not too easily disabled.
- Finally, make sure the system is capable of doing what it's supposed to do. The **ARLEC** models in our test, for example, don't offer the same level of protection as the **AEI** models because an intruder would be able to disable them relatively quickly and easily.

How to protect your home

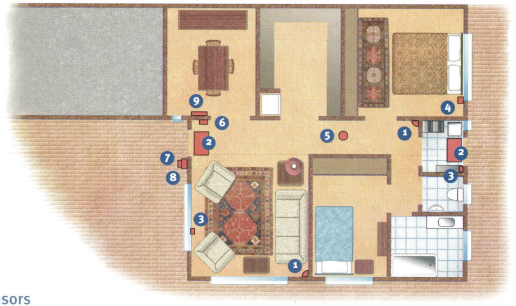


ILLUSTRATION: MIKE GORMAN

Sensors

Motion and body heat detectors (1) monitor an area in your home, such as a room or a passageway. Their field of view is typically a quadrant of about 6–10 metres, so they're usually placed in a corner. The alarm is triggered if it detects heat and/or movement. The most popular motion detectors for domestic use are **passive infra-red** (PIR) units.

A newer, more sophisticated sensor incorporates **infra-red and microwave** sensors, and the alarm sounds only if both sensors are triggered: the microwave detects movement and the infra-red detects heat. There are fewer false alarms, but they're more expensive.

Pressure mats (2) have two sheets of conductive foil held apart by foam perforated with large holes. When pressure is applied to the mat, the foil sheets contact each other, triggering the alarm. They're usually placed in doorways or under windows.

Reed switches (3) include a switch and magnet, and are installed on windows and doors — one goes on the fixed window or door frame and the other on the moving window or door. If the window or door is opened, the magnet and switch separate and the alarm is triggered. It won't be triggered if a window is smashed, so don't rely on reed switches alone — you'll have to get **glass break sensors** for this.

A **panic button** (4) can be put near your bed, say, so if you hear an intruder outside or in the house during the night, you can instantly activate the house alarm system and hopefully scare the intruder off. On more sophisticated systems, there may be a panic button on a system's remote control, so if you're attacked as you're entering the front door, you can set it off.

You can add **smoke detectors** (5) to many alarm systems.

A **medical alarm** can be useful for elderly or infirm people. It's only useful if it's connected to a phone dialler that's monitored by a security company, or set up to ring a family member or a doctor, say.

Output devices

There should be an **internal siren** (6) near an entry point, to make it uncomfortable and disorientating for the burglar. For added benefit, you could install a **second siren** at the opposite end of the house, so if the first siren is disabled, there's another one making a racket. An **external siren** (7) is best placed where a maximum number of people can hear it — like the front of the house. Put it up high, under the eaves of the house, for weather protection and inaccessibility for tampering.

A **strobe light** (8) not only alerts passers-by, but stays on until you reset it, to let you know when you get home that the alarm's been triggered.

Control panel

The control panel (9) should be located near your main point of entry and near a power source, but preferably out of view — in a cupboard or under the stairs, for instance.

Better still, get one where the keypad is separate from the control box, so the keypad is accessible but the control box is out of the way and hidden. (The ones we tested came with integrated units, although remote keypads are available as optional extras for the **AEI** models.)

SINGLE ALARMS

We also looked at two much cheaper, simpler DIY alarm units. Neither of them adequately protects your whole home and they should only be considered security accessories.

AMERIGARD Strobe Alarm Motion Sensor EG678 *($80): This is a combined movement detector, siren and strobe unit that could be used to monitor just one room. It's easy to use (with a remote control), easy to install and has entry and exit delay. The downside is that it can easily be ripped off its mounting and the alarm partially silenced by pressing the sensor against your body or under a pillow — and the first two samples we bought didn't work.*

AMERIGARD Wireless Magnetic Door & Window Alarm MMA-068 *($11): This is a magnetic switch with a built-in siren that's activated when the door or window is opened. It protects only one point of entry and has no delay — so if it's on the front door, the alarm sounds as soon as you open it (think of the boy who cried wolf). Once the alarm is activated, it doesn't stop till you get home and turn it off — or the battery runs out. And like the alarm above, it's easily silenced.*

DIY systems on test

We found four DIY home security systems on the market, ranging from $148 to $458. We installed each system, according to instructions, in a two-bedroom single-storey home.

HOW EASY ARE THEY TO INSTALL?

Three of the systems are wired, so you'd have to run wires either through the ceiling or under carpet (although that way you'd still have exposed wires on the walls). Running the wires through the ceiling requires some degree of athleticism, especially if your roof cavity is quite cramped, and it would be useful to have someone helping by feeding the wires through from below. A complex system, like the two **AEI** models, could easily take a day or more, even with two people on the job.

For more information, see our online article at www.choice.com.au; just type 'home security' in the search box.

The **ARLEC Wireless Alarm Kit** depends on batteries so it's easier to install, but less reliable because there's no low-battery warning on the sensors.

DO THEY WORK?

The four alarm systems did everything they're supposed to, although none of them meets the minimum criteria listed on page 9 as packaged. However, if you buy additional accessories and install them correctly, the two **AEI** models would meet the criteria, putting them on a par with professionally installed systems — for less than half the price.

The **ARLEC** models can't have the required strobe lights fitted and don't offer the same solid construction as the **AEI**s, so they're not recommended. ■

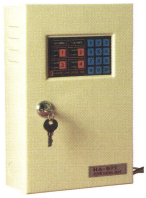
Profiles

The four DIY models tested are profiled from left to right. Prices shown are those we paid in September 2000. See the table for more detail on each system.

AEI Burglar Alarm System for Commercial and Residential Security HA-871 (L 5149)

Price: $358

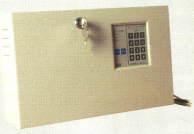
- Monitors four different zones.
- Suits a small two-bedroom unit, villa or townhouse; or a larger home if extended with additional accessories.
- It's the only system with a phone dialler — it'll call you (or another nominated number) if the alarm is triggered. The phone dialler will have to be professionally installed.
- By buying a back-up battery ($30), internal siren ($15) and flashing strobe light ($22–33), the system will meet NRMA Insurance requirements for a total cost of around $430. (These are available from Dick Smith Electronics.)



AEI 8 Zone Alarm System HA-982 (L 5189)

Price: $458

- Monitors eight different zones.
- Suits a large (two-storey) home if additional accessories are fitted to cover the whole area.
- By buying a back-up battery ($30), internal siren ($15) and flashing strobe light ($22–33), the system will meet NRMA Insurance requirements for a total cost of around $530 (These are available from Dick Smith Electronics.)



ARLEC Hard Wired AM400

Price: $148

- A basic, single-zone wired system with no advantages over the more sophisticated and robust **AEI** models, apart from a cheaper price.
- You can't buy a strobe light to bring it up to NRMA Insurance requirements for a home security system.

ARLEC WIRELESS ALARM KIT AM500

Price: $168

- A wireless single-zone system that's easy to install.
- Suitable for a home unit.
- Can add extra sensors for a larger home.
- The system can be disabled quite easily.
- No low-battery indicator for the sensors.
- You can't buy a strobe light to bring it up to NRMA Insurance requirements for a home security system.

RHONDA THWAITE

DIY Home security systems (see *What to look for*, page 10, for an explanation of the parts and features listed)

	Brand / model	AEI Burglar Alarm System HA–871 (L 5149)	AEI 8 Zone Alarm System HA–982 (L 5189)	ARLEC Hard Wired AM400	ARLEC Wireless Alarm Kit AM500
	Manufacturer/ distributor	Dick Smith Electronics	Dick Smith Electronics	Arlec	Arlec
	Price ($)*	358	458	148	168
	Warranty (years)	1	1 **(F)**	1	1
PARTS SUPPLIED (A)	Control panel	Yes	Yes	Yes	Yes
	Motion detectors, passive infra-red (PIR)	2	3	2	2
	Magnetic (reed) switches	5	5	2	1
	Panic/emergency switch	1	1	No	No
	Sirens	1 external **(B)**	1 external **(B)**	2: one internal, one external	1 internal **(L)**
	Flashing strobe light	No **(C)**	No **(C)**	No	No
	Back-up battery	No **(C)**	No **(C)**	No **(J)**	No **(J)**
FEATURES	Onboard panic button	Yes	Yes	No	No
	Phone dialler	Yes: two lines **(D)**	No	No	No
	Tamper protection	Yes: alarm operates when control panel door is opened **(E)**	Yes: alarm operates when control panel door is opened	Yes: alarm sounds when control unit is removed from mounting **(K)**	Yes: alarm sounds when control unit is removed from mounting **(K)**
	Battery-low indicator for control box	No	Yes **(G)**	Yes	Yes
	Programmable master code	Yes	Yes **(H)**	Yes	Yes
	Alarm operating time	30 seconds to 10 minutes; factory pre-adjusted to 1 minute	2–999 seconds; factory pre-adjusted to 5 minutes	1 minute	1 minute
	Single triggering of alarm	Yes: can be programmed so the alarm requires manual reset		No	No
	Multiple triggering of alarm	Yes: can be programmed so the alarm automatically resets		Yes: alarm sounds for 1 minute then resets	
	Optional extras	Movement detectors, reed switches, pressure mat, strobe light, siren cover, back-up battery, internal siren, remote digital access keypad, smoke detector, alarm stickers		None	Movement detectors, reed switches, external siren
ENTRY & EXIT DELAY	Programmable	Entry only	Entry and exit	No	No
	Exit delay (seconds)	70	2–999	30	30
	Entry delay (seconds)	2–120	2–999	8 on all sensors	8 on all sensors
ZONES	Number of zones	4	8	1	1
	Zone features	The 4 zones can be isolated to provide a combination of instant and delayed protection	The 8 zones can be isolated to provide a combination of instant and delayed protection	Can protect 4 different areas in the home but they can't be isolated independently	Can protect 3 different areas in the home but they can't be isolated independently
EASE OF USE	Control panel	Easy: punch code number in the keypad to arm/disarm the system or isolate zones		Very easy; punch code number into the keypad to arm or disarm the system	
	Instructions	Good	Fair	Very good	Very good
	Ease of installation	Fair: wiring diagram to connect accessories to control panel; would take two people approx. one day	Fair: no proper wiring diagram, only instructions; would take two people approx. one day	Good: wiring instructions are very clear; would take approx. 2–3 hours	Very good: no wiring needed; would take about 30 minutes
VERDICT	Does the system meet NRMA Insurance requirements?	Yes, if you buy a back-up battery, internal siren and strobe light for a total cost of around $430	Yes, if you buy a battery back-up, internal siren and strobe light for a total cost of around $530	No: requires a strobe light that's not available as an optional extra	

Good point

Bad point

* *Prices are those we paid in September 2000.*

(A) *Cabling, where necessary, and other fittings for mounting are also supplied.*

(B) *An internal siren is available as an optional extra.*

(C) *Available as an optional extra.*

(D) *Phone lines have to be professionally installed.*

(E) *Didn't work on the unit tested.*

(F) *The system can be returned within seven days of purchase if it isn't suitable or the installation is beyond your technical capabilities.*

(G) *LED light and a short beep to indicate low battery. Can be programmed to automatically test the battery every 24 hours or seven days.*

(H) *Up to eight different user codes.*

(J) *You can buy three AA batteries; it doesn't need a special battery.*

(K) *Note that both these models aren't very robust, and the built-in siren would be very easy to destroy with a hammer or crowbar.*

(L) *An external siren is available as an optional extra.*

Upgrading your SECURITY

IN A NUTSHELL

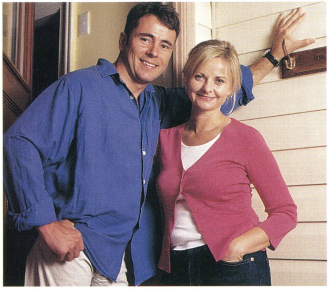
- **The number of home burglaries** *hasn't changed much over the last few years, but the location has, with some country areas now as high as the worst metropolitan areas.*
- **In a low-risk area,** *deadlocks and keyed window locks may be all you need. However, a good security screen door means you can leave the main door open in hot weather with peace of mind.*
- **In high-risk areas** *you can take many small steps to improve your security, although the best protection is likely to be an alarm.*
- **Don't forget** *to lock up your garden shed: it contains valuable tools — and invaluable aids to burglars.*

No suburb is immune to crime, so it might be time to reconsider your level of home security.

The most recent figures from the Australian Bureau of Statistics (ABS) show that reported home burglaries are decreasing nationwide — from 4.2% in 1998 to 3.8% in 1999. Western Australia has the highest rate at 5.4% and Victoria the lowest at 2.8%.

The main change is that rural cities and towns, like Bourke and Moree in NSW and the Kimberley region and Geraldton in WA, now have rates comparable with the worst metropolitan areas. And some previously high-risk metropolitan areas have less crime — most likely because householders are becoming more security-conscious.

Wherever you live, there's no room for complacency — so if your security isn't up to scratch, it might be time for a makeover. We went to two homes in Sydney — one each in a high-risk and a low-risk area — to check their existing security and, with the help of NRMA Insurance, advise them on improvements.



In a low-risk area like Peter and Heather's, deadlocks, window locks and a security screen door may well be all you need.

RHONDA THWAITE

LOW-RISK AREA

Pretty secure and little to do

Peter and Heather (below left) have a three-bedroom freestanding house in the southern suburbs of Sydney. The security expert from NRMA Insurance said because it's a low-risk area, an alarm wouldn't be necessary. However, he recommended keyed window locks and double-keyed deadlocks, which they already have. His only suggestion was that they upgrade their existing screen door to a security screen, so they can leave the main door open while they're out the back in hot weather.

- **ACTION:** Replace the screen door with a security screen (see *Tips for buying and installing*, page 17).

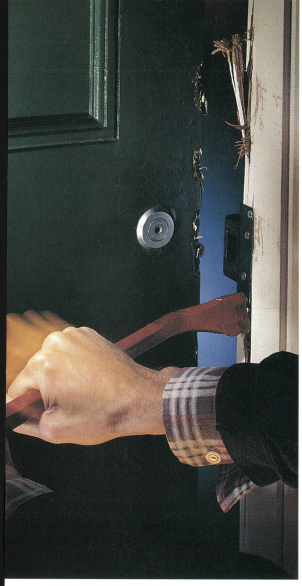
HIGH-RISK AREA

Starting from scratch

Zoe and Tom have just bought a semi-detached terrace house in Sydney's inner-west which, like many inner-city areas, is a high-risk area for burglary. They've known the previous owners for many years, which gives them the advantage of knowing the home's weak points when planning a security makeover: the house has a history of break-ins and attempted break-ins, and they want to take steps to prevent similar attempts occurring.

How many sets of keys are there?

Like many large inner-city houses, it was used for share accommodation for almost 20 years, with countless



KIRSTY MCLARS

An alarm system may be the best option in a high-risk area like Zoe and Tom's, but there are lots of other small things you can do to improve your home's security — see below.

RHONDA FINNETE

residents and boyfriends/girlfriends coming and going. There's no way of knowing how many sets of keys are still out there, nor who they're with.

ACTION: The first thing to do is change the locks, installing good-quality deadlocks (see *Tips for buying and installing*, page 17). If there's already a good deadlock, it's cheaper just to have it rekeyed.

An open invitation

One break-in occurred when someone left a window open during the day. Even though it was only a couple of metres from the street, a shrub provided enough cover for the thief to quickly get in. After stealing a few things from that room, he made his way upstairs, where a sleeping resident woke up and frightened him off.

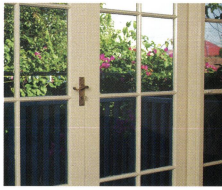
ACTION: Don't leave windows open. Burglary statistics show that around 3% of burglars enter a home through an open window.

Tom and Zoe may also consider pruning the shrub so there's a clear view of the window from the street.

It's the way it shatters that matters

Two attempted break-ins occurred when intruders smashed panels in rear windows. Both times they were interrupted by occupants going to see what the noise was. The windows were fitted with window locks, so a casual thief may have gone no further. However, as our test of window locks showed (CHOICE, March 1996), very few will stand up to a determined thief with a jemmy — which is why forced windows are the most common source of entry for burglars.

ACTION: Window locks are still a good start, especially for discouraging casual thieves (see *Tips for buying and installing*, page 17).



Small window panes may be more tempting to thieves because they make less noise and mess when they break.

VANESSA MARSHALL

The other step is to stop thieves smashing the windows in the first place:

- One possibility is to replace them so they're less tempting to thieves. Small panes of glass make a lot less noise and mess than large panes, and a thief can then reach through to unlatch a door or window if it doesn't have a decent lock. It would be better to have a less appealing (to thieves) single pane with a large sheet of glass.
- Tom and Zoe could consider getting windows with toughened glass that's harder to smash, or reinforcing it with a security film or stainless steel mesh.
- A final option is a security grille on some windows. They're usually fitted to windows near laneways or other sites where thieves can gain easy entry and exit. It's best to seek professional advice on what's appropriate. If you install grilles, you also need to develop a quick-exit strategy for getting past them in case of fire.

Increase the hurdles

The last obvious security problem for Tom and Zoe involved theft from the backyard. The house has a laneway beside and behind it, with a low (1.5 m) brick wall surrounding the courtyard. For many years there was intermittent petty theft, like stealing garden tools

and washing from the clothes line — the low wall made it easy for thieves to get in and out of the courtyard quickly. This wasn't just a theory: on the two occasions when intruders were interrupted while attempting to break in, they showed how quickly and easily they could get away over the back wall.

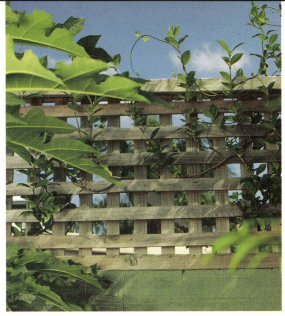
When the courtyard was relandscaped a few years ago, a row of trellis was put on top of the wall for some climbing plants. Without turning the place into Fort Knox, it had the unexpected side effect of drastically reducing the petty theft because it's much more difficult to get over the wall. And it's so much more attractive than broken glass embedded in concrete!

ACTION: Even though most burglars wouldn't bother trying to climb over the trellis, there's still the back gate — they should get and use a good padlock (see *Padlocks*, far right).

They should also lock their garden and other tools away so they can't be used by thieves to break in. Using the property's own ladder is a classic burglary tale.

Other security measures

- Install an alarm system — according to NRMA Insurance, it's the best form of security available. See our test results for DIY home security systems on page 9.



VANESSA MARSHALL

A trellis to increase wall height and a securely padlocked garden shed and back gate can protect your property from casual thieves without turning it into a prison.

- Install movement detector lights both back and front.
- Although there's never been any evidence of attempted break-in through the ceiling, it wouldn't hurt to put a lock on the trapdoor leading to the shared roof space. If a thief gets in next door, it's easy enough to get into Tom and Zoe's place too.
- Buy some timers to switch lights, the TV or radio on and off when they're out late or travelling.
- Get to know the neighbours, so they can report anything unusual and look after each other when they're on holiday.
- A guard dog might suit some people. However, Zoe and Tom are busy people and travel a lot, and wouldn't be able to give it the attention it needs.

GENERAL TIPS FOR ALL HOMES

Apart from the above tips, other security measures include:

- Don't store your house or car keys on a key rack on display, because it makes it easy for a burglar to get all your keys and come back for more. Similarly, don't leave keys in an obvious place like the kitchen table or sideboard.
- If you've been broken into once, you're more likely to be broken into again — burglars know the layout of the house, how to get in and what's available.
- If you're going away for any length of time:

— Lock all doors and windows.
— Keep blinds and curtains partly open to give the house a 'lived in' appearance.
— Remove all money and valuables to a safe place, such as your bank.
— Ask the post office to hold your mail.
— Cancel all regular deliveries such as milk and newspapers.
— Ask a friend or neighbour to keep an eye on your home. ■

WHAT THIEVES WANT

Even though the number of burglaries is decreasing, the cost of claims is going up. This is because people have a lot of readily portable, valuable possessions that are easy to steal and sell. Jewellery and cash are the major targets for thieves, with VCRs, computer game consoles and the games themselves, CDs, stereo equipment, portable CD and cassette players and notebook computers high on the hit list. DVDs and DVD players are becoming more popular in homes, and their small size and high value makes them an appealing target too.

- If you keep valuable jewellery or large amounts of cash in your home, you could invest in a wall or floor safe.
- Don't leave notebook computers and other valuables lying around where they can be seen through a window.
- Record the serial numbers of your electrical, photographic and other valuable equipment, and engrave (or otherwise mark) them with your name and driving licence number; you could also take photos of jewellery and artwork. Even though it's unlikely to deter thieves, it will make it easier to identify them if they're found.
- CDs are a popular item because they're easy to carry away and dispose of. Keep a list of your collection so you can replace it more easily — you'd be surprised how much it's all worth.
- Gardens are becoming increasingly targeted by burglars — probably due to better security in the rest of the home. Lock up lawnmowers, power tools and other expensive items (including bicycles and toys) when you're not using them. You should also lock up anything that could help a thief break in — ladders, crowbars, hammers, etc.
- The garage can also be a goldmine for thieves — make sure it's secure.

Tips for buying and installing

Deadlocks

A deadlock is any lock that incorporates a deadbolt — a bolt that isn't spring-activated, so it can't be pushed back (with a credit card, say).

A common problem we found when testing them (CHOICE, December 1994) was that some allowed the key to be removed before it was fully turned, leaving the bolt only partially extended. When you buy a lock of this type, make sure you can't remove the key unless the bolt is fully extended and locked.

It's ironic that as the quality of locks is improving, the quality of doors and door jambs is declining. These days it's more likely to be the door or jamb that succumbs to jemmying or kicking than the lock.

If the lock isn't fitted correctly, it's also likely to fail. Many locks are incorrectly installed, greatly undermining their effectiveness. Worse still, if you make a mess of installing it, you could leave the door or door jamb weakened. If in doubt, get a professional to install it.

Security screen doors

There's an Australian standard (AS 2803) for hinged and sliding security screen doors made from steel or aluminium. It includes design and performance requirements for various parts of the door, such as hinges, grille, corner joints, lock, screws and rivets.

Australian Standard
AS 2803
Standards Australia

Look for the Standards Australia logo when you choose one. If a company claims its door meets the standard but it doesn't have the label, ask to see proof, such as an independent test report, or get a written guarantee that the whole door meets the claim, not just one or two components.

The standard also covers the installation of the door — ask the installation company for a written guarantee that its work complies with the standard.

If you're buying an aluminium door, make sure it's made from heat-strengthened (tempered) aluminium.

Don't forget a screen door for other entrances as well as the front door.

See CHOICE, October 1998, for an in-depth article on buying a security screen door.

Window locks

We tested locks you install yourself (CHOICE, March 1996), and found there's no easy way to recognise a good window lock. Price doesn't tell you much, either. Our testing experience tells us, though:

Locks for aluminium sliding windows were the best in our test — although none was as good as a 32 mm x 12 mm wooden rod cut to length and placed in the window track (runner). Locks that fit higher up the vertical rail (rather than over the runner) were better for this type of window.

If you have double-hung or sash windows, look for a lock that can be mounted on the side rail of the sash, rather than the horizontal rail (the side of the window, rather than the middle). It'll resist a force like a jemmy better.

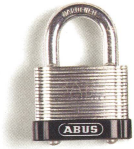
The best locks for casement and awning windows (which swing outward to open) rely on the screws holding firmly into the wood, rather than on a bolt fitting through the sill or frame. Unfortunately most of the locks we tested for these kinds of window failed. Only two of the tested locks — the **LOCKWOOD 885** and **WHITCO 3531** — were recommended, though we don't have results for more recently released locks.

Check the lock fits your windows — some can only be fitted to windows of a certain size or shape.

Whatever locks you buy, it's important they're properly installed. If you're not confident of your DIY skills, get a professional.

For convenience and safety, get locks that have a common key, and keep it handy in case of fire.

If you lock your windows open, make sure the gap isn't big enough for CD and DVD players and VCRs to be passed through.



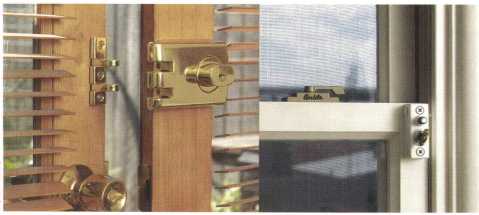
PADLOCKS

Buy a padlock with a laminated body (above) — made of lots of thin sheets of steel or brass (for outdoor use) sandwiched together. Our tests (CHOICE, June 1999) showed they're tougher than solid brass padlocks.

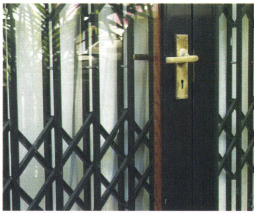
Get the largest padlock you can feasibly use: none of the 40 mm padlocks were up to the task in our tests.

A single-locking padlock has one notch in the shackle, while double-locking has two. Double-locking shackles make the padlock harder to pick.

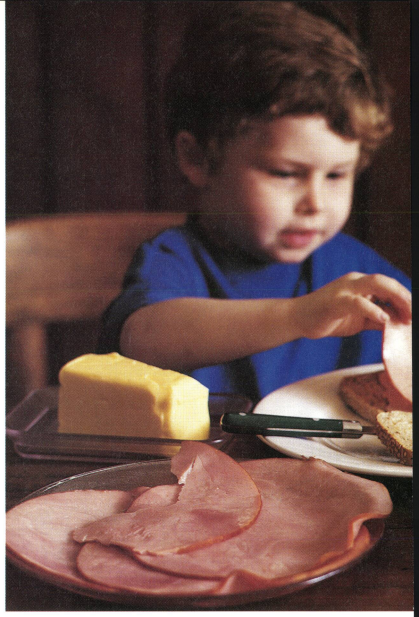
The strongest padlock in the world won't do you any good if whatever it's locked to can be cut or broken off easily.



PHOTOLIA THINKSTOCK



Why the HAM went off



Want to shop once a week and still have ham for sandwiches every day? Here's why you're often disappointed.

IN A NUTSHELL

Our test *of packaged and unpackaged, shaved and sliced ham revealed some very high levels of bacteria, but fortunately there's only a slim chance ham will make you sick. (See page 20 for the results of our test.)*

Your unpackaged ham *might not last as long as you'd expect, though, because of the high bacteria levels. And our survey showed it could depend on where you buy it:* ***COLES*** *and* ***WOOLWORTHS*** *delis sold ham with lower overall levels of bacteria than* ***FRANKLINS,*** *as did most independent delis.*

If you buy unpackaged ham slices from a supermarket delicatessen your best bet is **COLES** or **WOOLWORTHS**. Our survey found unpackaged ham from **FRANKLINS** (including **FRANKLINS BIG FRESH** and **FRANKLINS FRESH**) to be significantly worse than the other two chains for microbiological quality — nearly a third of the samples had levels of bacteria high enough to be considered unacceptable (for what these results mean, see *Quality,* page 20). The ham's unlikely to harm you, but probably wouldn't last more than a day or so in the fridge before having to be thrown out.

That said, though, on average bacteria levels from none of the retail chains were ideal. Freshly sliced ham can have as few as 100 bacteria per gram, but this can increase to about 10,000 after display for 24 hours. On average, we found levels of about 100,000 in samples from **COLES** and **WOOLWORTHS** — still acceptable quality, but higher than they could be if you want the ham to last.

We also checked samples of unpackaged ham from 73 independent delis. Bacteria levels were OK in more than 60% of them, but this still isn't as good a result as for **COLES** or **WOOLIES**.

The number of all bacteria tells one story, but the simple presence of certain types tells another. *E. coli* or staphylococcus (a bacterium that can cause food poisoning in high enough numbers) in six of the deli samples, as well as *E. coli* in one sample each from **WOOLWORTHS** and **COLES**, suggests poor handling practices in these outlets. See *Safety*, page 20, for what the presence of these bacteria signifies.

SLICED OR SHAVED?

Because shaved ham has a much larger surface area exposed to oxygen than sliced ham, there's more chance for bacteria to multiply. But our results didn't find any significant difference between unpackaged shaved versus sliced ham.

Still, once you get it home, unpackaged shaved ham probably won't last as long as sliced ham, even if you store it properly in the fridge (see *Storing ham, page 20*).

HOW TO SPOT A DICEY DELI

Dirty floors and counters can carry bacteria and attract pests. If people don't keep their premises clean, chances are they don't do much better with the food.

Watch out for staff running hands through hair or across their nose, with dirty hands or nails, dangling jewellery and long hair not tied back; any of these indicate **unhygienic handling practices.** Nail polish is a no-no because it can chip into the food; cuts on the hands or arms should be covered with waterproof bandage (as well as a glove, if on the hand).

Handling raw chicken (which is usually also in the deli area in supermarkets) and then handling ready-to-eat processed meat. Raw food contains plenty of bacteria, sometimes including ones that can cause food poisoning. If these are transferred to ready-to-eat foods (known as cross-contamination) food poisoning can occur. We're happy to say our buyers found practices in this regard to be generally good. Usually staff used the 'inside-out bag' method — so their hand (or glove, if they were wearing one) didn't touch the food.

Don't automatically think that if staff are wearing **gloves** everything is OK. Gloves can get dirty and transfer bacteria to food too. In fact, a major review of the scientific literature has concluded that there's no documented evidence that food prepared and served by people wearing gloves is safer than food prepared by people using effective hand-washing procedures. When gloves are used they should be an addition to good hand-washing practice and in no way a replacement for it.

The inside-out plastic bag method of handling raw meat is effective, with or without a glove as well. Gloves themselves aren't foolproof: they can get dirty and transfer bacteria to food too.

Staff wiping surfaces or equipment with a non-disposable cloth — or not disposing of it afterwards — is a bad sign. Just because a cloth looks clean doesn't mean it is.

ALL PICS: RHONDA THWAITE

WHAT ABOUT PACKAGED HAM?

You can buy two types of packaged ham: sliced and vacuum-packed (oxygen removed from the package) or shaved in a 'ham house'. This type of packaging is known as modified atmosphere packaging (MAP) — where most of the oxygen in the packaging is replaced with other gases (usually carbon dioxide and nitrogen), slowing the growth of some spoilage organisms. The 'ham house' is used so the shaved ham doesn't get squashed.

Results of our small survey suggest that levels of bacteria don't depend on whether the ham is sliced or shaved but more on brand (see the table on page 20).

The worst brand was **PRIMO** sliced ham — we rated five of the six packets as being of unacceptable microbiological quality. The manufacturer was very concerned about these results, as it has a very strict quality assurance program and says independent tests show its products never leave the factory with bacteria levels anywhere near what we found. This highlights the role of the distributor and retailer in the whole process — poor storage or handling temperatures enable bacteria to multiply fast. CHOICE's advice to manufacturers is to check how their product is handled all the way down the line to its display in the store.

While it's hard to pinpoint exactly why some brands had such low levels of bacteria and some much higher levels, it would partly be due to the combination and level of salt and preservatives in the product. Some of the hams, in addition to containing nitrite as a preservative, also contained a sulphite preservative (223 — sodium metabisulphite, which can be a problem for any asthmatics who're sensitive to it). For more, see *What's in packaged ham*, page 21.

DID YOU KNOW ...

... that the likelihood of money changing hands in a deli, say, transferring food-poisoning bacteria to food is quite slim. One recent study in the US found hardly any potential pathogens on money (both coins and notes) collected at random from doctors and other staff at a New York hospital. Another US study, which involved spiking coins with *E. coli* and salmonella, concluded that the bacteria were inactivated by the coin surface drying as well as a bactericidal effect of copper (Australian five, 10, 20 and 50 cent coins are 75% copper).

The test

UNPACKAGED HAM

In Brisbane, Melbourne and Sydney we bought both sliced and shaved ham from six outlets of each of the three major chains (**COLES, FRANKLINS, WOOLWORTHS/SAFEWAY**), as well as ham (sliced, and shaved when available) from over 20 independent delicatessens in each city. We bought honey ham when available (because it's the most common type), or whatever 'regular' type of ham was on offer (like 'premium', 'double-smoked', 'champagne').

PACKAGED HAM

In Sydney, we bought widely available brands (both sliced and shaved): six samples of each from six different retail outlets. As noted on page 19, it's not just the manufacturer that determines the quality of a brand — the distributor and retailer play a large part as well. Not storing the product at the right temperature can reduce its life. Buying the samples from six different outlets gives a greater chance of the 'average' result being representative of the brand rather than of the storage conditions or handling at retail level (though it still can't take transport and warehouse storage into account).

Sliced and shaved ham

(in alphabetical order within groups)

		1 QUALITY		2 SAFETY	
Unpackaged ham	**Number of samples**	**Borderline samples**	**Unacceptable samples**	**Borderline samples**	**Unacceptable samples**
COLES	36	2	0	1 **(B)**	0
FRANKLINS	36	13	11	0	0
Independent delis	73	15	4	5 **(C)**	1 **(D)**
WOOLWORTHS / SAFEWAY	36	3	1	0	1 **(B)**
Packaged ham					
CASTLEMAINE Shaved Honey Roast Ham	6	1	1	0	0
DON DELI SUPREME Premium Smoked Leg Ham **(A)**	6	1	0	0	0
HANS Lean 'N' Tasty 97% Fat Free Honey Leg Ham **(A)**	6	0	2	0	0
HUTTONS Shoulder Ham	6	0	0	0	0
KR Leg Ham **(A)**	6	0	1	0	0
KR Lean Shaved Honey Leg Ham	6	0	0	0	0
MAKERS CHOICE Shaved Roasted Honey Leg Ham	6	0	0	0	0
PRIMO Lite Leg Ham **(A)**	6	0	5	0	0

(A) *Sliced ham, vacuum-packed.*
(B) E. coli
(C) *Three* E. coli, *two staphylococcus.*
(D) *Staphylococcus.*

1 Quality

Large numbers of bacteria indicate poor quality — food's been handled unhygienically, subjected to temperature abuse (for example, not refrigerated properly during distribution and/or retail display) or is just plain old. A high standard plate count (SPC — a count of all the bacteria present in the food) means that a food is close to going off or may already be off, depending on the count. We rated samples for quality as follows:

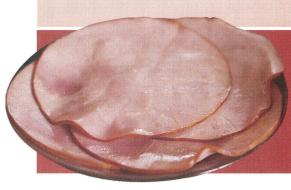
Borderline: SPC 10^6–10^7 per gram (10^6 is a million).
Unacceptable: SPC more than 10^7 per gram.

2 Safety

Certain bacteria (called pathogens) can cause food poisoning or other disease. We tested for bacteria that can both indicate poor handling practices and make you sick. Though salmonella, *Clostridium perfringens*, campylobacter and *Bacillus cereus* are all bacteria in food that can make you sick, we didn't test for them because a recent survey by the WA health department didn't find any of them when it checked deli meats. It did find *Listeria monocytogenes* in a small number of samples, though, which can be a problem for pregnant women, possibly causing miscarriage. We tested for the following:

- ***E. coli*:** Indicates faecal contamination (usually due to poor personal hygiene — food handlers not washing their hands after going to the toilet, for example). While its presence mightn't make you sick, high levels mean a breakdown in hygiene practices and may indicate the presence of other pathogens (like salmonella and shigella, and viruses like rotavirus). We rated *E. coli* as follows: **Borderline:** 10–70 *E. coli* per gram. **Unacceptable** (potential health hazard)**:** More than 70 *E. coli* per gram.
- **Staphylococci:** At *any* level it indicates poor handling practices. Coughing, sneezing or touching food when you've got a cut or boil can all lead to contamination. We tested for a type of staphylococcus that, at high levels, can cause food poisoning. We rated samples as follows: **Borderline:** 100–1000 per gram. **Unacceptable** (potential health hazard)**:** More than 1000 per gram.

STORING HAM



The best way to store unpackaged sliced or shaved ham is to take it out of its original wrapping (usually paper and plastic sheets) and put it in a plastic container. This will stop it sweating, which makes it go off faster (it'll happen if you wrap it tightly in cling wrap, for example), or drying out. If you leave it loosely wrapped in the original paper the surface will dry out, which slows down microbial growth, but the ham will change colour and lose some flavour.

ALL ABOUT HAM

Ham is meat from the hind leg or shoulder of a pig that's **cured** to stop the growth of spoilage bacteria. (Leg ham is considered the premium product; many 'shoulder' or 'sandwich' hams are made from pork offcuts.) **Salt** in the cure helps prevent spoilage because it draws water out of the food, so the bacteria don't have the moisture they need to thrive.

Sodium or potassium **nitrite** is added to stop bacteria growing and to maintain the pink colour. Nitrites can combine with amines in the stomach to form nitrosamines, which are potentially carcinogenic. However, you'd have to regularly eat large amounts of food high in these additives for it to be worrying. And these days cured meats have lower levels of nitrites than before, as well as added ascorbates (vitamin C and derivatives). Ascorbate prevents the formation of nitrosamines (hence the advice often given to drink orange juice at the same time as eating bacon or ham).

After curing, ham is usually **smoked** to give flavour and further preserve the meat. Flavour depends on the length of smoking as well as the smoking material (type of wood). Often liquid smoke is used commercially.

Nutrition

Nutritionally hams vary depending on the cut of meat used. The fat content may be as low as 3–5% (the 'lite' type). In fact, these days most ham is fairly lean. Salt content varies depending on the amount of salt used in the cure. A usual amount would give you around 1500 mg of sodium per 100 g — that works out at 15% of the upper recommended daily intake in a slice). Reduced-salt hams are available these days.

How do you know what you're buying?

There are no industry standards for the different types of ham. So, depending on the manufacturer, the same type, while generally made along the same lines, might taste quite different.

Broadly, there are two types of ham:

- **Full muscle:** The slices are cut off the bone. The ham will have been cured and smoked, as well as usually pumped up with water (using polyphosphates to bind it in).
- **Reformed:** This is where small pieces are put back together into various shapes. Generally, reformed products have extra water added (and gums to keep the water in).

Here's a guide to some of the names you'll often see:

- **Champagne:** Typically, it's sliced from a full leg, with the bone removed. Generally at the top end when it comes to quality.
- **Honey ham:** Honey (and sometimes sugar) is added to the cure to give the ham a sweet flavour. It contains slightly less salt than normal and has a softer texture. One manufacturer told us its honey ham was reformed, another didn't specify.
- **Double-smoked:** Again, this may vary from manufacturer to manufacturer, but it's generally full-muscle leg ham with a smokier than normal flavour, because it's been either smoked for longer in the smoke house or a higher concentration of liquid smoke has been injected into it.
- **Soccer-ball leg ham:** An Australian speciality made from a leg of ham that's been formed into the shape of a soccer ball, then smoked and cooked. It may be made from full-muscle leg or reformed ham.
- **'Lite' ham:** Generally full-muscle leg ham that's been very well trimmed of fat. Packaged 'lite' ham usually claims a fat content of 3%. Unpackaged 'lite' can vary in the amount of fat — there's no regulation of the term, but guidelines suggest that something that's 'lite' in fat should have at least a quarter less fat than a 'regular' version. 'Low-fat' ham (which might also be labelled as 'lite') should have no more than 3% fat.
- **Shoulder or sandwich ham:** Generally reformed from pieces of shoulder ham.

The bottom line is you don't really know whether you're getting reformed or full-muscle ham when you buy at the deli. While price is a good guide to quality, it's not a certainty. If you want to be sure you're getting full-muscle ham your best bet is to watch them slice it off the bone in front of you.

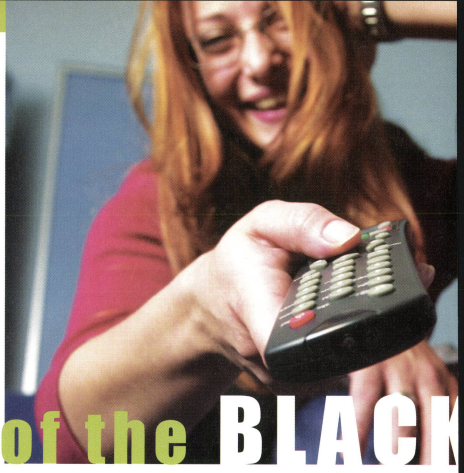
Other hams

- **Prosciutto:** A **raw** ham that originated in Parma, Italy. The ham is rubbed with a special mixture, then rested for some days before the process is repeated. After maturing, the ham is pressed, steamed and rubbed with pepper.
- **Coppa:** A small **raw** ham from Italy that's been boned and air-dried for a long time. Similar in taste to prosciutto.

WHAT'S IN PACKAGED HAM?

All you need to do is look at the ingredients list for packaged ham to see that it's much more than 'ham'. For a start it contains the usual curing agents like salt and nitrite, as well as smoke flavour. Then it's got mineral salts (polyphosphates) that help to pump the ham up by holding in added water. Some of the brands also have starch, soy protein or vegetable gums that help bind up even more water and prevent it from seeping into the packet. Soy protein can also improve the texture in lower-quality ham. And some brands have extra preservative (from the sulphite family): of the ones we looked at **HUTTONS Shoulder Ham, KR Leg Ham** (sliced) and **MAKERS CHOICE Shaved Roasted Honey Leg Ham** all had preservative 223 in them. And if all that's not surprising enough, some of them also have the flavour enhancer monosodium glutamate (621) in them (**HUTTONS Shoulder Ham, KR Leg Ham** (sliced) and **HANS Lean 'N' Tasty 97% Fat Free Honey Leg Ham**).

At least with packaged ham, you can see from the ingredients list the little 'extras'. But with the unpackaged ham you buy at the deli counter, you've no real way of knowing how many, if any, of these 'extras' you're getting. See *How do you know what you're buying?*, above, for more on this.



How many black boxes do you really need in your lounge room to keep you entertained?

Home of the BLACK

IN A NUTSHELL

What you do for sound *is still largely up to you — you can stick with your TV's speakers or go the whole hog with a six-speaker, surround-sound home entertainment system. But digital and wide-screen TV are starting to force your hand — in the direction of your wallet — when it comes to receiving the pictures.*

It may be true that the future of home entertainment will be far simpler than the present, thanks to all sorts of single devices becoming one big device spread all over your home.

But we live in the present, where we can still only dream of that simple black-box-free living room. So here's a short guide to some of the boxes and devices currently to be found in a technophile's lounge room.

THE PICTURES

TV

The largest and usually most obvious box is the television. There was a time when the only really defining features of the TV were its size and whether you wanted stereo sound. Today there's a huge range of sizes, from 34 cm (usually found in the kitchen or bedroom) to well over 100 cm. But that's the easy part. You also have to decide whether to go with traditional TV technology or move into the newer realms of enormous back-projection devices and wide-screen TV.

One factor is often overlooked by the technophile trying to get their head around the big picture: the bigger the screen, the further you have to sit from it to avoid seeing the lines that make up the picture. A rule of thumb is five times the diagonal measurement of the TV's tube. This measurement is how TVs are traditionally described, so to watch a 68 cm TV you should be 3.4 metres away. If you opt for a 100 cm model you need to be five metres away, so you need a pretty large lounge room.

This problem can be made even worse if you go for a back- or front-projection system. These use a special type of projector located behind or in front of a very large screen. These systems can have relatively low light intensity compared to a normal TV, so you'll need a very large and darkish room to get the desired effect.

Do I need a digital TV?

No. The TV is just a device for displaying a picture and projecting sound. It can't display an image any sharper than its screen will allow, no matter how good the signal coming to it, but you'll still get pictures and sound on an analogue TV from a digital signal if you have a 'set-top box' that converts it back to analogue (see right).

Digital signals come in two types:

- SDTV — standard-definition TV: similar to the current analogue signal for picture, but without snow and ghosting problems and with improved sound.
- HDTV — high-definition TV, which has a much sharper picture and excellent sound.

High-definition broadcast uses most of the spectrum available to the broadcaster to provide its image and sound. A standard-definition broadcast uses much less of the available spectrum and this means each broadcaster could provide extra programs or services like different-language versions of the same program, or views of sporting events from different angles.

It doesn't matter which signal you receive: if your TV set is only capable of displaying SDTV, that's what you'll see.

VANESSA MARSHALL

RHONDA TINNIKIT

The cost of a digital television (DTV) is likely to be much higher than its analogue equivalent. Also, there's no clear evidence that the picture on a digital TV looks better than one on an analogue to the average viewer if they have the same resolution and receive the same signal.

Digital broadcasts will be mainly in the width-to-height ratio of the 16:9 wide-screen format, which means you'll get black bands at the top and bottom of your screen if you've got a standard 4:3 TV. This won't bother some people, but if you don't like it, a 16:9 TV could be on your shopping list soon. Just remember they're wider than they are tall and you might have some trouble fitting one into your existing entertainment unit.

Eventually all digital broadcasts will be in 16:9 format, but you don't have to buy a 16:9 digital TV; an analogue 16:9 set with a set-top box will provide just as good a picture at a lower cost. (Some newer 4:3 format TVs let you vertically distort the picture to get rid of all or most of the black bars, but unfortunately you lose some of the picture too — including any subtitles. See our latest test of TVs in CHOICE, April 2001, for more.)

So do I need a high-definition TV?

You only need a high-definition television (HDTV) if you want to get the benefit of HD broadcasts: a sharper picture and very good sound. As standard-definition TV will still be available, you don't have to shell out for one. In fact, only the truly well-heeled will be able to afford the $20,000 currently necessary to get an HDTV set.

One advantage of this type of set is that it would reduce the viewing distance from five times to 2.5 times the diagonal of the screen, because HDTV has a similar resolution to a good-quality computer monitor.

A similarly expensive alternative is a plasma screen. They're very thin by comparison with TVs — around 15 cm thick. They're capable of delivering high-resolution pictures similar to HDTV, because they're made up of thousands of pixels (think of a pixel as a dot that can change colour). Each pixel glows red, blue or green when activated by a gas that's converted to a plasma state by an electric current. If any one of these pixels fails, though, it leaves a very annoying little black spot. Also, all the plasma screens CHOICE has seen so far have had trouble with fast-moving objects, which seem to leave a trail of colour behind them as they pass across the screen.

Set-top box

Those who want digital quality without the cost of a digital TV can opt for a set-top box to convert digital signals into the signals that an ordinary analogue TV can display. This means you don't have to buy a new TV, but the box itself could cost around $700 (see the photo above).

The main advantage of this is ghost- and snow-free pictures. However, because of SDTV's versatility it can also give you all sorts of extras, such as being able to choose the angle you watch sporting events from, buying goods, participating in quiz shows while watching them, or being able to record hundreds of

A set-top box can give you digital picture quality on an analogue TV, but currently they cost around $700 and may not have many desirable features, so it's probably worth waiting a few months more.

hours of TV. Some of these extras will be dependent on the TV stations and others won't be available for some time. If you're thinking of buying a set-top box now, check out its features, and if it doesn't have all you want, it might be worth waiting for a few months.

The main disadvantage — apart from the cost — is that you'll have one more black box and remote control in your home.

CHOICE recently hired a 16:9 analogue TV and a set-top box to see how a system works in real life. You can read about our experiences with it at www.choice.com.au (just type 'digital TV diary' in the search box.)

Pay TV

Your cable pay TV system is yet another black box with a remote control, and you'll also receive your free-to-air channels through it, for better reception. Cable TV is an analogue signal. The free-to-air digital TV signal will be converted to analogue and retransmitted by the cable companies.

Satellite pay TV is a digital signal, but a variation on the free digital TV technology — so you'll still need a separate box complete with its own remote control.

VCR

A VCR's major disadvantages are the loss of picture quality when taping and the occasional tape that self-destructs in the machine, often requiring expensive expertise to extract. But it's currently still the only affordable technology that lets you record TV programs, so VCRs aren't likely to be making a swift disappearance.

Hifi VCRs can be connected to your sound system and deliver good-quality sound if you have a hifi recording, but connecting them is often a real challenge. The mess of wires and cables that can be needed to achieve this audio improvement is made even more complicated as you add more black boxes.

DVD

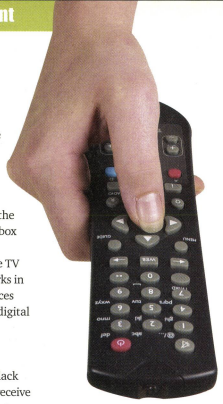
Will DVD replace the VCR? We think it's unlikely in the near future because you can't record to a DVD as easily or cheaply as you can to a video tape. However, the superior sound and picture quality of the DVD could mean lots of them will find their way into lounge rooms across the country sooner rather than later even though you can't use them to record from the TV.

Video CD players haven't taken off here, but you can play video CDs on your DVD player. They're just compact disks with movie files on them and they have the advantage of not being zoned like DVDs (see DVD players, page 32, for more on this), so it doesn't matter which part of the world they come from.

Most DVD movies are in 16:9 format — another reason for considering a 16:9 TV if you're thinking of upgrading.

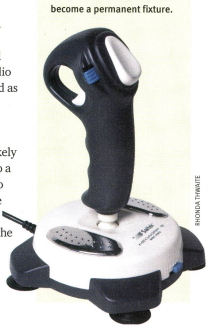
Laser disk

No longer new and never a very successful technology, these are large devices by normal black-box standards. Their major attraction is the quality of the image, but the lack of movies available on laser disk means not many homes will have one.



AND THEN THERE ARE GAMES

Just when you thought your home entertainment system couldn't get any more cluttered and confused, along comes the games console. The connection of these devices to the TV is usually pretty straightforward and today they come in a range of colours and shapes. But be warned, the trend is towards the dreaded black box — with so much computing power that, once connected, they'll become a permanent fixture.



RHONDA THWAITE

THE SOUND

Before there was a TV set in almost every home in Australia, there was radio, and people sat around the hifi system to listen to records. In fact they still do (with CDs replacing records), but which of these audio black boxes will be around in future?

What's on the way out?

- A **CD player** may be the only piece of audio equipment to be superseded by a video device. DVD players can play CDs to a similarly high sound quality. However, currently CD players have useful features and functions specific to CDs that aren't available on DVD players.
- **Tapes/cassettes** are a technology that's steadily being replaced by CD players and DVDs, which give better sound quality and heaps of convenient features.
- Some people miss the sound a good-quality record **turntable** can produce. Most, though, have already relegated them to the storeroom of history.

Still around

- Home theatre and DVD have resulted in a need for more and more **speakers**. Any self-respecting home theatre owner will need up to six (including a sub-woofer). There's not enough space in this article to do justice to the technical reasons for such a massive expansion (stereo systems only require two speakers), but at least the designers don't include a separate remote control for each. However, they do need metres of wire to connect them to the amplifier and you can't just shove them in a cupboard.
- One of the happiest examples of technologies converging is the joining of the **radio tuner** and **audio amplifier**. Only the most adamant of audiophiles treat these as separate units these days. Incidentally, true audiophiles may also have another small black box called a pre-amp. Owners of these devices usually take their sound very seriously indeed, but most of us can survive quite well without it. ■

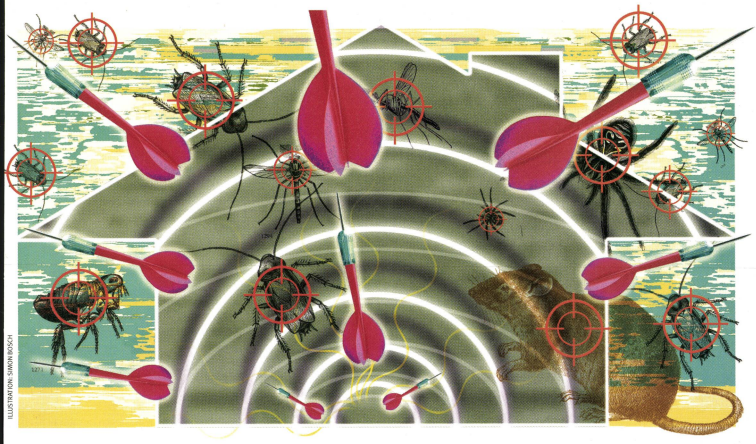


ILLUSTRATION: SIMON BOSCH

An electronic pest control device: no fuss, environmentally friendly and containing no nasty chemicals. Just plug it in and watch those critters run for their lives. Too good to be true? You bet!

Zap those bugs?

Electronic pest-repelling devices — costing anything from $70 to $130 each — have been around for the past 20 years or so, but have only recently become popular and widely advertised, probably due to their environmentally friendly claims. CHOICE has received heaps of enquiries about them.

When switched on they're claimed to drive away all kinds of insects and vermin from your home, including cockroaches, ants, spiders, ticks, fleas, mosquitoes, rats, bats, mice and possums.

Manufacturers market these devices using pseudo-scientific jargon like "Phase-Shift-Current technology" and "advanced ceramic ultrasonic acoustic transducer" to impress you. The burning question is, do they work? We went looking for evidence.

WHERE'S THE EVIDENCE?

We searched the peer-reviewed scientific literature and found no evidence that these devices actually repel insects and rodents (see below for details). So we asked the manufacturers and distributors for scientific data to back up their claims for these products.

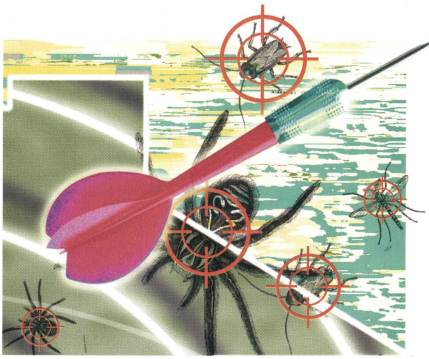
The test data from those that did supply it was either of a preliminary nature — that is, there needs to be more testing before you can draw any conclusions — or we found serious flaws in their experiments.

COCKROACHES AND ELECTROMAGNETISM

We obtained a 1992 test report on two electromagnetic (EM) pest-repelling devices by Dr John Rodger, then of the University of Newcastle. It concluded that the two

IN A NUTSHELL

Lab tests *and field studies show pest control devices that claim to work by ultrasound or electromagnetism don't work. And the science behind these devices suggests they never could.* **Don't waste your money.**



EM devices tested have "no deleterious effects on the cockroaches and spiders", and that it "does not appear that the cockroaches and spiders are repelled by the devices, even when given the opportunity to escape".

We also contacted a university in Sydney that conducts a lot of research into pest control. They've visited inner-city apartments where EM devices have been operating and found they still had significant German cockroach infestations, which suggests these devices don't live up to their claims. (German cockroaches are the small brown ones you generally find inside.)

Several other laboratory and field studies on EM devices have been conducted on German cockroaches to see whether they have any effect on cockroach movement, feeding, mating and development. They concluded that the devices have no effect on cockroaches' movement and that continuous exposure to them has no effect on cockroach eggs hatching and the way the nymphs (young cockies) develop.

And a field test was conducted in apartments infested

THE THEORIES

There are two basic types of electronic pest devices on the Australian market — those that allegedly work by electromagnetism alone and those using it in combination with ultrasound. They're sold mainly through mail-order companies, over the Internet and in some electronics stores such as Dick Smith Electronics, Tandy and Retravision.

Electromagnetism

When an appliance is switched on, a very weak electromagnetic (EM) field develops around the current-carrying wiring in your home. Some pest-repelling devices claim to alter the EM field of your household wiring to turn your whole home into a giant pest repeller, driving all pests out of the walls.

CHOICE's lab looked at the electronics of one of these devices. When plugged in, it generates a pulse in the electrical current (which also makes the indicator light switch on and off). This causes the current in the house wiring to fluctuate, which in turn makes the EM field fluctuate. This supposedly creates an intolerable environment for the pests.

However, this device draws only a very small amount of current compared to normal household appliances. Even an incandescent light bulb draws considerably more. So the EM field strength generated by the device is very small — quite possibly too small for insects and rodents to detect.

Supposedly, it's the fluctuations in the current that drive out the pests, but if they can't detect the low-level EM field in the first place, they couldn't detect the fluctuations — and even if they could, it's still by no means clear that they're repelled by them.

Ultrasound

Ultrasonic waves are short-wavelength, high-frequency sound waves too high in pitch to be heard by the human ear — that is, frequencies higher than 20,000 Hz. Humans can hear frequencies from 20 to 20,000 Hz, but as we age we become less sensitive to the higher frequencies. (Long-wavelength low frequencies — below 20 Hz — are called infrasound and are also inaudible to humans.) Although the claims for the pest-control devices imply that ultrasound has special properties that make it more repellent to pests than sound that's audible to humans, there's no evidence to support this.

We can't hear ultrasound because our eardrums can't vibrate fast enough, but some animals, such as dogs, bats and rodents, can hear well into the ultrasonic range. Some insects, like grasshoppers and locusts, can detect frequencies from 50,000 Hz to 100,000 Hz, and moths and lacewings can detect ultrasounds as high as 240,000 Hz produced by insect-hunting bats.

Insects detect sound by special hairs (sensilla) located on the antennae (mosquitoes) or genitalia (cockroaches), or by more complicated tympanal organs (grasshoppers, locusts, moths and butterflies).

But just because they can detect ultrasonic waves

with German cockies. After three months, the study concluded that the devices were ineffective at controlling cockroaches in either homes or commercial sites.

COCKROACHES AND ULTRASOUND

A US laboratory studied the effects of four ultrasonic devices on German cockroaches: 300 cockies were placed in a large test chamber with a pitfall trap (which acts as a refuge from the ultrasound) to see whether they would migrate to this area. They were given 24 hours to acclimatise before the test started, and food and water were provided so they weren't stressed.

Also, to see whether ultrasound causes auditory stress to cockroaches (as is sometimes claimed), another bunch of cockies was continuously exposed to it for a week, and then exposed to chlorpyrifos (a poison common in cockroach baits) — the theory being that stressed cockroaches are more likely to succumb to the poison.

Although the cockroaches could detect the ultrasound and responded by increased movement, the ultrasonic devices didn't repel or kill them, nor were they more susceptible to chlorpyrifos.

There's also been field testing on ultrasonic devices that found cockroach populations weren't reduced in treated apartments, and that claims of cockroach and flea control couldn't be proved.

SO DO THEY WORK?

There's no scientific evidence to support the claims for the various electronic pest-repeller devices, whether they're based on ultrasonic or electromagnetic activity. Nothing in the scientific theory (see *The theories*, below) suggests they can affect the pests in ways like driving them away or deterring them from entering the treated area, and field and lab tests have shown them not to work in practice either.

CHOICE would like to see the manufacturers demonstrate their devices' effectiveness and substantiate their advertising claims by rigorous scientific testing — or remove them from sale.

CHOICE's verdict: Don't waste your money. ■

WANT MORE INFO?

If you'd like more information on dealing with the pests that invade your home, see the CHOICE Books catalogue that came with this issue to order the following titles:

- Safer pest control for homes and gardens.
- Termites and borers.

doesn't mean they're controlled or repelled by them. Cockroaches, for example, respond by moving about a bit more than usual (see *Cockroaches and ultrasound*, above), but don't appear particularly eager to escape from the "irritating pulsations". This includes devices that emit uniform frequency as well as changing frequencies of ultrasound.

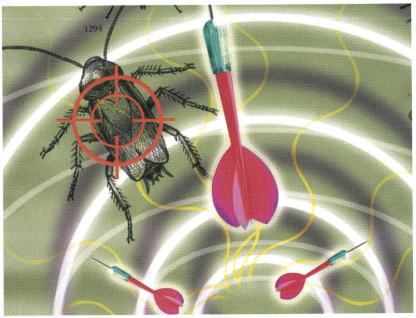
Rats adjust to the ultrasound (or any new sound) and eventually ignore it. At best, ultrasonic waves have only a partial or temporary effect on them. Numerous studies have rejected ultrasonics as a practical means of rodent control.

And even if they did work...

Even if there were any merit to these devices, science tells us that ultrasound can't penetrate solid surfaces such as walls, floors and ceilings, or travel around corners.

To visualise how ultrasound travels, imagine a floodlight is the ultrasonic device: the ultrasound will radiate outwards in a cone shape, throwing shadows behind solid objects, casting very little light in other rooms, and getting weaker the further it travels.

So, theoretically, you'd need one device for every separate space you wanted to protect — including every room in your home, under the roof and floor, and in every wall cavity (where cockroaches live and breed). A two-bedroom home, for example, would need at least half a dozen devices, which isn't cheap. Also, each space would need to be clear of solid objects like shelves, screens or other furniture, because one piece of cardboard is enough to severely dampen ultrasound intensity.



Finally, ultrasound doesn't travel as well as audible sounds (due to its short wavelength), and as the distance from the device increases the sound intensity rapidly drops off. Experts have concluded the devices couldn't produce a sound strong enough to be detected by insect pests over the areas claimed (140–186 m^2).

SHOWER GEL: getting into a lather

Too many to choose from? Here's a starting point, plus a look at some common myths about shower gel, soap and cleanliness.

IN A NUTSHELL

- **Shower gels** *are selling like hot cakes. We've increased our spending on them dramatically over the past five years.*
- **They cost** *much more than a bar of soap, but aren't necessarily better for your skin — see page 30 for* All about shower gel.
- **Our trial results** *in a nutshell: Best-liked overall:* ***JOHNSON'S pH 5.5****. Best-liked fragrance:* ***AVON Skin-So-Soft Soft & Sensual*** *and* ***THE BODY SHOP Juice It Mango and Peach****. Best-liked texture:* ***JOHNSON'S pH 5.5****.*

Shower gel sales are on the rise. They've long been used in Europe, but their popularity is fairly recent here. And it looks like we've taken to them with a vengeance. While they were barely seen in shops in 1995, sales almost doubled in 1998–99. Last year we spent more than $34 million on them in grocery stores alone.

This is an interesting trend considering that most shower gels cost much more than soap bars, but aren't necessarily better for your skin. So what are we getting for the increased expense? Do we really need a shower gel to keep our skin clean and healthy? For answers to these and other questions, see *All about shower gel,* page 30.

WHICH ARE THE BEST?

More than 200 CHOICE Home Testers trialled 27 shower gels — see their comments for the seven best-liked (right) and five least-liked (page 30) brands to find out what's popular with users and what's not, and what you might like yourself. The scores for all 27 gels are listed in the table, page 31.

The trialists' ratings indicate that fragrance is most important in a shower gel. If they liked the smell, they generally scored the product highly overall — and they wanted that fragrance to linger.

How it feels is also important. Creamy, velvety or smooth consistencies were clearly preferred to runny, gluggy, oily or watery textures. And if you only need a small amount for a good lather, that's even better.

We also asked trialists to note how easily the gel rinsed off. Most rated pretty well, but some with particularly good scores for this washed off so easily because they didn't lather up well in the first place, eliciting comments such as: *"It was gone before it had a chance to be on."* And the two that were harder to rinse off were, perhaps not surprisingly, gels with essential oils or high levels of moisturiser, which people with dry skin might prefer. Water hardness will influence rinsing too, so for all these reasons we haven't scored it.

THE TOP SEVEN

	PRICE PAID PER 100 mL
JOHNSON'S pH 5.5	$1.55
AVON Skin-So-Soft Soft & Sensual	$5.30
CLAIROL Herbal Essences	$2.20
LYNX Voodoo	$2.35
THE BODY SHOP Juice It Mango and Peach	$5.80
LUX Skincare with Nourishing Moisturisers	$1.86
LUX Skin Sense Embrace with Neroli and Ylang-Ylang	$2.70

Profiles

These shower gels scored significantly higher than average overall. They're in rank order, from left to right, with a selection of trialists' comments. Prices are those we paid, converted to a unit price for 100 mL for comparison.

JOHNSON'S pH 5.5

Price per 100 mL: $1.55

- "Nice silky wash with no strong scent."
- "Very creamy and also an appealing colour (cream pearl)."
- "Clean and fresh fragrance, suitable for men and women."
- Left skin feeling moisturised.

AVON SKIN-SO-SOFT SOFT & SENSUAL

Price per 100 mL: $5.30

- "A very luxurious shower ... a great lead-up to a romantic evening."
- "Very pleasant fragrance, floral but not too sweet."
- "Left the skin feeling very soft and silky."
- Creamy texture.

CLAIROL HERBAL ESSENCES NORMAL SKIN FORMULA

Price per 100 mL: $2.20

- "Just the right consistency, a very fresh smell and it moisturised my skin well."
- "Fruity fragrance, healthy and nice."
- "Excellent — does the essential job of cleaning effectively."
- Left skin feeling refreshed.

LYNX VOODOO

Price per 100 mL: $2.35

- "I felt my skin had really been cleaned after using it, and isn't that what it's all about?"
- Smooth texture — "Felt really nice while lathering."
- A little bit goes a long way — "I was surprised by the small amount required."
- Fragrance tends to linger — "Strong smell, masculine, seemed to last all day."
- Left skin feeling refreshed.

THE BODY SHOP JUICE IT MANGO AND PEACH*

Price per 100 mL: $5.80

- "Great gift, especially for someone who likes mangoes!"
- "Smells good enough to eat!"
- "Felt very sensuous going on."
- Fragrance tends to linger — "A peachy smell was present for a while."

* See page 7 for more on Juice It products.

LUX SKINCARE WITH NOURISHING MOISTURISERS

Price per 100 mL: $1.86

- "Nice feel, smell not overpowering."
- "Like silk on my skin, felt wonderful."
- "Right consistency and easy to apply."
- "My skin felt very nice after using it and the fragrance was pleasant and lasted well."

LUX SKIN SENSE EMBRACE WITH NEROLI AND YLANG-YLANG

Price per 100 mL: $2.70

- "A very pleasant experience."
- "Felt wonderful on skin and body."
- Creamy texture — "Quite smooth."
- "I liked the fragrance and it lingered for the rest of the day."

ALL PICS: RHONDA THWAITE

THE TRIAL

We bought 27 regular shower gels costing less than $15 and widely available in supermarkets, variety and specialty shops, and by mail order. We transferred the gels into small, unmarked bottles so the trialists — 233 CHOICE Home Testers — wouldn't know which brand they were using.

Each home tester used a shower gel for two consecutive showers and then filled in a questionnaire, indicating:

- How much they liked the fragrance and whether it lingered.
- How much they liked the texture and how they'd describe it.
- How much gel they had to apply for a satisfactory lather.
- How easy it was to rinse off.
- How their skin felt afterwards.
- Whether it caused any skin irritation.

Each brand was tested by about 40 trialists. We thank all of you for your help — and hope you had fun getting into a lather!

CHOICE HOME TESTER

ALL ABOUT SHOWER GEL

DO YOU NEED ONE?

No, you don't *need* one, really. Water alone is often sufficient to cleanse and refresh your body under the shower. Using soap sparingly — and possibly a moisturiser afterwards, if you have dry skin — will leave your skin just as clean and healthy.

But a shower gel may be a tad more convenient. You no longer have slippery soap slithering out of your hands, insufficient foam if you live in a hard-water area, or soap scum in the soap dish or shower recess.

WHAT'S IN IT?

Apart from water — up to 80% — a shower gel typically consists of cleansing and foaming agents (detergents) and skin conditioners to counteract the detergents' drying effect. Other possible ingredients include thickener, preservative, colour and, of course, fragrance.

WHAT'S 'pH BALANCED'?

Healthy skin is slightly acidic (pH 5.5) because of the sweat and sebum it secretes. These substances protect it against environmental influences it's subjected to: wind, dust or low humidity, for example. They also guard against harmful micro-organisms that can cause infections.

Washing — even with just water alone — irritates the skin temporarily, but cleansers such as soap, shower gel or wash lotion amplify these irritations.

Soap is alkaline. It neutralises the skin's protective layer and leaves it a bit puffy, bloated and sensitive to bacterial or fungal attacks. But this reaction is temporary. Healthy skin recovers quickly — an hour or two after washing with soap it's regained its natural protective ability.

Shower gels that are 'pH neutral' or 'pH balanced to your skin' are neutral to slightly acidic and are claimed to be less irritating.

But both soap and shower gel affect the skin. So if that worries you, or you have particularly dry skin, use them sparingly — just in your armpits and the groin area. Water alone is fine elsewhere.

DOES IT MOISTURISE THE SKIN?

That depends on what's in it. The detergents used in shower gel tend to dry the skin — some even more so than soap, depending on the type and quantity. To counteract this effect moisturisers and skin conditioners are added.

For a higher moisturising effect, you could try a shower gel marketed for dry skin or a '2 in 1' product that's claimed to moisturise *and* clean. But for best results use as little gel as possible and a body moisturiser afterwards, which won't get washed or towelled off.

ARE 'CLINICALLY TESTED' ONES BETTER?

All shower gels are dermatologically tested, so a claim that the product has been tested means nothing, unless it also reports the outcome of the test.

SHOULD I APPLY IT WITH A LOOFAH?

No, unless you suffer from *keratosis pilaris* (a fairly common skin condition where bumps appear on the outer upper arms, outer thighs and buttocks). Loofah sponges are used to exfoliate the skin. But the outer layers of healthy skin will flake off naturally when ready and need no artificial stimulus.

CAN I USE IT IN THE BATH OR AS A SHAMPOO?

Some shower gels are marketed as bath *and* shower gels, others are marketed for shampooing as well. So what's the difference?

A bath foam that isn't marketed for use in the shower can contain more concentrated detergents, unsuitable for direct application to the skin unless diluted in bath water. Shampoo, on the other hand, usually contains detergents in similar concentration to shower gels.

Whether you'd be happy with 'shower-gelled' hair obviously depends on your hair and the product you use. One with a high level of moisturiser may be unsuitable — especially if you have thin or oily hair — as it could leave a greasy film.

What they didn't like

These shower gels scored significantly lower than average overall. They're profiled with a selection of trialists' comments.

RED EARTH BELIEVE LAVENDER & YLANG-YLANG

Price per 100 mL: $2.98

- "No advantage to using this one over soap. It's really like liquid soap but with an unpleasant smell."
- "Reminded me of a household cleaning product."
- "Very difficult to lather."
- "Disappointing. Didn't feel refreshed at all."

BATHOX PURE LAVENDER

Price per 100 mL: $0.40

- "It had a strong soap or detergent smell."
- "A bit like liquid soap — no creaminess or freshness."
- "Didn't lather, and made my skin feel dry and taut."
- Significantly fewer trialists indicated that it made their skin feel moisturised.

ORIGINAL MINT SOURCE TEA TREE AND MINT

Price per 100 mL: $1.90

- "Boy! Very strong — maybe I should use it on my teeth!"

Shower gels

Brand (in rank order)*	1 Overall score (%)	2 Fragrance score (%)	2 Texture score (%)	Price paid ($/100 mL)
JOHNSON'S pH 5.5	75	70	78	1.55
AVON Skin-So-Soft Soft & Sensual	72	74	73	5.30
CLAIROL Herbal Essences Normal Skin Formula	72	72	73	2.20
LYNX Voodoo	72	68	77	2.35
THE BODY SHOP Juice It Mango and Peach	72	74	75	5.80
LUX Skincare with Nourishing Moisturisers	71	68	74	1.86
LUX Skin Sense Embrace with Neroli and Ylang-Ylang	70	69	77	2.70
CAMPBELL Natural Selections Aloe Vera	68	64	73	1.64
AQUA SOURCE Imperial Leather All Day Regular	67	65	75	1.90
FA Exotic Garden	66	71	72	1.86
ST IVES Antioxidant Vanilla & Vitamin E	66	70	71	1.60
NORSCA with Scent of Pine, Spruce and Birch	65	62	69	1.44
PALMOLIVE Naturals with Apricot Milk	65	68	72	1.83
RADOX Shower Fresh Angelica & Rosemary	65	61	72	1.67
BADEDAS Original with Horse Chestnut	64	63	70	3.34
THE BODY SHOP White Musk	63	62	68	6.38
DOVE 75% Moisturiser	62	61	63	2.35
PENTAL ESSENCES with Essential Oils	62	63	67	1.67
PALMOLIVE Naturals with Almond Oil & Vanilla	61	60	72	1.70
SANEX Dermaprotector	61	60	70	1.92
ADIDAS Dynamic	60	63	70	2.92
BATH ESSENTIALS The Body Collection Peach & Vanilla	56	54	64	2.70
SEDUCE Aromatherapy The Body Collection	53	44	67	4.35
AVON Naturals with Lemon Juice and Mandarin Extract	52	47	65	5.30
ORIGINAL MINT SOURCE Tea Tree and Mint	50	44	64	1.90
BATHOX Pure Lavender	48	52	58	0.40
RED EARTH Believe Lavender & Ylang-Ylang	48	49	61	2.98

** Terms such as 'shower gel', 'body wash', 'bath and shower gel', moisturising' or 'refreshing' in the product name are omitted for space reasons.*

1 Overall score
Trialists gave an overall rating out of five, which we averaged and converted to a percentage score.

2 Fragrance, texture
Trialists also rated separately the fragrance and texture of the shower gel. We averaged their scores and converted the rating to a percentage.

IS SOAP BETTER FOR THE ENVIRONMENT?

Yes. Shower gels are harder on the environment because they contain synthetic detergents as cleansing agents. And then there's the packaging. For every shower gel sold, a bottle or tube has to be manufactured and disposed of after use. So choose packaging made of plastic materials you can recycle, or refillable bottles.

ITCHY SKIN?

According to a dermatologist we spoke to, the main reason for eczema is a combination of having long, hot showers, lathered up from top to toe, and living in low-humidity environments (air-conditioned or centrally heated). Getting too hot under a doona and then scratching the skin while asleep can exacerbate the problem.

▮ "Smelt like mouthwash and felt like a deep-heat muscle rub."
▮ Significantly more trialists indicated it made their skin feel tingly and irritated (mainly a burning or stinging sensation, felt primarily on sensitive areas). The packaging does tell you to test it on a small patch first if you have sensitive skin.

AVON NATURALS WITH LEMON JUICE AND MANDARIN EXTRACT
Price per 100 mL: $5.30
▮ "Smelt more like shower cleaner than shower gel."
▮ "Quite mediocre. It didn't do anything for me."
▮ "A nothing sort of smell, hard to lather and I didn't feel clean — very disappointing."

SEDUCE AROMATHERAPY THE BODY COLLECTION
Price per 100 mL: $4.35
▮ "Had a chemical smell."
▮ "Pretty average. Nothing to make it special, except the colour."
▮ "Although it left my skin feeling smooth and soft, the initial fragrance was a definite disincentive."

DVD PLAYERS

Didn't think DVD was a good enough deal last time round? How about at *half* the price?

IN A NUTSHELL

- **DVD players** *have become much cheaper.*
- **All the models** *in this test are good at what they're supposed to do, so features are likely to help you choose* *(see page 35).*

When we last tested DVD (digital versatile disk) players just over a year ago they were high in quality, but also high in price. What a difference a year makes: now they're around half the price, and a lot more DVDs are available in your local video store.

But why switch from your VCR, which can play and record videos as well as play home movies from your camcorder? You'll get better picture quality from a DVD player and it has surround sound, though you can't take full advantage of this without a proper surround-sound system to go with it. A DVD player can also play your music CDs. What it can't do yet is record TV programs like a VCR or play back your home movies, though some can play CDs you've recorded yourself on your computer or stereo system.

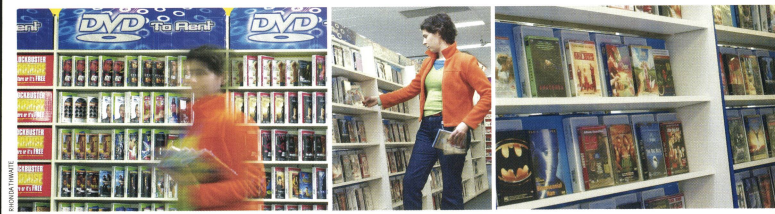
For cost reasons, we got together with our European counterparts to test DVD players, which means not all the models available in Australia are included in the test: there are models from Grundig, Hitachi, JVC, Kenwood, LG, Pioneer, Sanyo and Sharp in a similar price range, and with similar features. But if you're considering a switch from your VCR, our test results still cover some major players on the market.

BETTER PICTURE

A DVD can have around 500 horizontal lines of resolution, compared to 260 on standard VHS video. That's a big improvement even on a small TV, and you won't notice much difference in picture quality between the models in this test. (You may if your TV is bigger than 68 cm; see *What to look for*, page 34, for details.)

All the models tested were free of screen 'noise', jitters or picture jumping when playing a DVD in normal play mode. Differences in picture quality showed up in slow, still and search modes — the search mode on all DVDs gives jumpy pictures, but all the tested models still scored well. The **SONY, DENON,** and **YAMAHA** have excellent still pictures and slow play.

PHOTOS: TAHAITE



BETTER SOUND

While the sound quality also depends on the DVD you're playing, all the tested players can produce CD-quality stereo sound. You may not notice much difference in sound quality if you're only using your TV speakers for sound. But if you connect the DVD player to your stereo, differences in sound quality will come through, so look for a DVD player with a high score if you want to do this.

A DVD player won't replace a high-quality CD player — the sound's fine, but it may be harder to use, you won't get special CD functions (such as peak search, fader, information display) and error correction won't be as good.

NOT SO EASY TO USE

If you're happy that just about any model will have good enough picture and sound quality for your needs, you'll probably end up choosing a DVD on how easy it is to use and what features it has (see *What to look for*).

True to the established tradition of video players, DVD players are packed with features and not particularly easy to use. A panel of five users rated models on a five-point scale, looking at the user manual, positioning of connectors, inserting disks, basic set-up, basic operation, special functions, programming, remote control and CD-audio operation. A few standout points noted were:

- The **PANASONIC** and **YAMAHA** instructions are inadequate — and with programming and set-up as complex as they are, that's a problem.

WHAT TO BUY

SONY DVP-S336	$599
YAMAHA DVD S796	$749
SAMSUNG DVD511	$529

The **SONY** was the best model for picture quality and the **SAMSUNG** for sound; all three would be a good buy, especially if you found them at a good price.

- The **DENON** took 10 times longer than the fastest players — the **PANASONIC** and **YAMAHA** — to search through to the end of the disk.
- The **SONY, YAMAHA** and **PANASONIC** scored the best for ease of use, with good set-up and operation.

COPING WITH SCRATCHED DISKS

Despite the best of care, CDs and DVDs can get scratches or marks. Error correction tests checked how well players cope with shaking, bumping, and faulty disks — with a range of scientifically prepared scratches and dots on them to simulate damage. Most players had some problems with error correction (see the table, page 36), with the **SAMSUNG** the poorest performer.

Operational noise was also a problem. The **DENON** and **PANASONIC** make the loudest noise during a operation, but the **SONY** has sharp sounds, which can be much more annoying.

HOW VERSATILE IS THE DISK?

A DVD looks like a CD, but can hold much more data — enough to give high-quality video. But there are some pros and cons compared to video tapes.

- Unlike a VHS tape, if you remove the disk and reinsert it later, a DVD won't remember where you were, though it will if you stop it and press play later without removing it from the player. DVDs store information in chapters or sections, but while you can skip between chapters, that might not be the spot on the disk you're looking for.
- DVDs are far more durable than a VHS tape, and easier to clean.
- Disks can contain a lot more information: with films they generally include extra scenes, bonus features like interviews with cast members or directors, trailers, and other information that makes them great for collectors.
- Though most video stores stock some DVDs, that's not going to expand much in the near future.

The US movie makers have established a strict system of regional releases, and this is what limits your choice (see *Region coding*, page 36, for details).

TYPES OF PLAYER

Players come in single-disk or multi-disk models. Multi-disk can be useful if you want to use your DVD player as a CD player, letting you play multiple disks without reloading. The models tested are all single-disk players. There are also portable models, which look a lot like a laptop computer.

If you're looking for a home theatre package, you can get a DVD with speakers and built-in amplifier. Australia is just starting to see TV/DVD combinations.

Computer consoles can also come with a DVD player — the Sony Playstation 2, for example.

What to look for

If you don't read the user manual it's impossible to program the Philips — here's the starting point!

To get the maximum benefit of DVDs' high picture quality, you also want features that make for ease of use and functionality. Check the special effects capabilities, progressive scanning and number of video outputs — particularly if you want to integrate your DVD player into your home theatre.

▮ **Video input/output connections:** To get the best-quality picture, you need good-quality connections to your television. There are several types of input/output and we've listed them below in decreasing order of quality.

ICRT

However, they'll be no use unless your television has matching inputs to the DVD outputs. For 68 cm TVs or larger, the difference in these types of output becomes important, and the bigger the TV, the more likely it is to have the higher-quality connectors.

— **Component video** can handle black-and-white signals separately from colour signals and will produce very good-quality video. A variant of this, **progressive-scan component output,** gives the highest-quality analogue picture. It generates an image in one pass, compared to two passes for regular component video, to give better resolution.

— **S-video** is common on mid to high-priced TVs, but isn't quite as good as component video connections.

— **Composite video** is the standard connector for video signals.

— **SCART** connectors combine composite video and S-video into a single connector.

▮ **Audio in/out:** Most players have both an analogue stereo and a digital stereo audio output. The analogue output will connect to almost anything, including your TV. The digital outputs connect to digital receivers via one of four formats — PCM, AC$_3$, MPEG-2 and DTS. These give better sound quality than analogue, but whichever format you use you'll need the appropriate decoder in your audio receiver.

▮ **Ability to play different disk types:** If you want your DVD player to stand in for your CD player, it'll need to be able to play audio CDs, but you may want other formats too — CD-recordable (CD-R) or rewritable (CD-RW) discs or MP$_3$ CDs if you burn your own CDs, and video CDs or laser disk, for example.

Profiles

The models in the *What to buy* list are profiled in rank order. Prices shown are a good target to aim for when shopping around, based on nationwide checks in late 2000. Anything lower is a bargain. See the table on page 36 for the DVD players' scores for the various elements of the tests.

SONY DVP-S336

Target price: $599

Good points

▮ Best picture quality.

▮ Good access times in skip mode and the fastest to read a disk, so you can load and search DVDs or CDs fast.

▮ Very good error correction with CDs.

▮ Very low power consumption in standby mode.

▮ Timer

▮ Second SCART jack for input/output.

▮ Most functions can be operated from the player, so you can still use them if, say, the remote has flat batteries.

▮ Plays CD-RW disks (see *What to look for*, above).

Bad points

▮ Doesn't play CD-R disks.

▮ Only fair error correction with faulty DVDs — makes a loud, sharp operating noise, compared to other tested models.

YAMAHA DVD S796

Target price: $749

Good points

▮ Short search and skip times.

▮ Very good error correction with faulty DVDs.

▮ Plays CD-RW disks.

Bad points

▮ Instruction manual is inadequate.

▮ Doesn't play CD-R disks.

ICRT

The Sony (above) and the Denon can be operated almost completely from the front panel as well as with the remote.

- A good **remote control:** Look for conveniently placed buttons, and the most commonly used functions accessible within a few button presses.
- Ability to **operate the player** from both the remote and from the front panel display. While most models in our test have some functions available from either, only the **SONY** and **DENON** have most functions available from the player.
- **Childproof lock** can prevent playback of disks or scenes with objectionable material. Ideally, this can be password-protected.
- **Onscreen display:** It should be easy to navigate and available in several languages.
- **Special effects playback:** Special features can make viewing DVDs much easier. Look for chapter preview, pause, playback, forward and reverse scan, zoom, freeze, step, fast and slow motion, and frame-by-frame in forward or reverse.
- **Programming:** Particularly if you want to use your DVD as a CD player, this helps by letting you play back selected tracks/sections in a desired sequence.
- **Headphone jack.**

Features they (nearly) all have

Most of the features and functions of a DVD player can be operated from the remote control. Some of the common ones we found were:

- Ability to play audio and video CDs.
- All current audio formats: PCM, AC3, MPEG-2, DTS (see *Audio in/out*, left).
- Displaying chapter number/track number in numbers and characters for CDs and DVDs.
- Programming in any order and with repeats; program storage (CD only); and last storage step able to be deleted. Track and title repeat for CD/DVD so you can play CDs over and over.
- Able to change TV picture format (16:9, 4:3 pan&scan — where the sides are cropped, 4:3 letterbox — where the picture is vertically squashed) so you don't see black bars around your picture.
- Can play 8 cm CD singles.
- Random/shuffle for CD.

Features none of the players has

- Jog/shuttle wheel for easy search or slow motion.
- Slot to keep the remote control tucked out of sight when not in use.

WHAT ABOUT THE REST?

- *The **PANASONIC** and **TOSHIBA** don't have the range of features of some of the other tested models, and the **PANASONIC** also has the lowest score for sound quality.*
- *If you already have trouble using a VCR, you probably want a DVD that's as easy to use as possible. In that case, the **DENON** certainly isn't for you, and the **TOSHIBA** and **PHILIPS** might also not be the best choice.*

ICRT

SAMSUNG DVD511

Target price: $529

Good points

- Best sound quality.
- Lowest operational noise.
- Program storage for DVD as well as CD.

Bad points

- Doesn't plays CD-R or CD-RW disks.
- The lowest score for error correction.
- Basic DVD functions are the hardest to use.
- Sharp, loud operating noise.

ASPECT RATIO AND ALL THAT JAZZ

The first time you watch a DVD on your TV, you may find wide black bars at the top and bottom of the screen. At its worst, you may be looking at a screen shaped like a letterbox slot, known as 'letterbox' format. That's because DVD disks come in a number of 'aspect ratios' — a measure of the width in proportion to height of the screen. Many disks have the format listed on them, and you can adjust your player to suit by programming it. All the models we looked at can change the aspect ratio through the remote control programming function.

PHONOLA PHAVETE

When buying DVDs, check the aspect ratio and other properties of the disk — it's likely to come in several different formats, and perhaps with different special features included.

DVD players

Brand / model (in rank order)	PERFORMANCE 1 Overall score (%)	2 Picture quality score (%)	3 Sound quality score (%)	4 Ease of use score (%)	5 Versatility score (%)	6 Error correction score (%)	7 Environment score (%)	FEATURES Onscreen display languages	Headphone socket
SONY DVP-S336	82	95	78	70	66	81	96	5	
YAMAHA DVD-S796	78	92	80	69	59	78	76	5	
SAMSUNG DVD-511	76	87	94	63	64	61	86	6	
PANASONIC DVD-RV20	74	92	69	68	52	69	76	5	
PHILIPS DVD711 (A)	74	82	81	59	77	81	64	8	
TOSHIBA SD-1200	74	90	73	58	52	72	86	5	
DENON DVD-1500G	72	84	73	49	64	73	95	4	✓

REGION CODING

Region coding is a way of staggering DVD releases internationally. Movies released to DVD in the US may not have premiered in Australian cinemas, so the DVD Copy Control Association established region coding as a way to maintain interest in cinema releases around the world. Its argument is that without DVD region coding, you'd have to wait until a film had been in cinemas everywhere before it was released as a DVD. The regions are:

1: US, Canada, US territories.
2: Japan, western Europe, South Africa and the Middle East (including Egypt).
3: Southeast Asia and east Asia (including Hong Kong).
4: Australia, New Zealand, Pacific islands, Central America, South America and the Caribbean.
5: Eastern Europe (including ex-USSR), Indian subcontinent, Africa, North Korea and Mongolia.
6: China.
7: Reserved.
8: Special international venues (planes, cruise ships).

The DVD player you buy is encoded to play only DVDs for that region; the DVD you buy is also encoded. But even for movies that are released at the one time worldwide (like *Star Wars Episode I*) the DVD version is still coded for different regions. For other movies, a region 4 version isn't produced at all — so there won't be as many new-release DVDs down at your video store.

Newer DVDs check the player for a region code matching the player, so if they don't match, you're out of luck. If a friend sent you the latest American (region 1) DVD, for example, you wouldn't be able to play it on your Australian (region 4) player. This is a fairly recent development, and if you bought a DVD player some time ago that plays 'all-region' disks, it might not play new disks.

RHYDON TIMMITE

SPECIFICATIONS

9 Disk repeat (DVD / CD)	10 Plays CD-R / RWCDs	11 Programmable DVD / CD	Special functions	Dimensions (H x W x D; mm)	Weight (kg)	Origin	Warranty (years)	Target price ($)*
✓ / ✓	✗ / ✓	✗ / ✓	(D)	70 x 430 x 255	2.9	Japan	1	599
✓ / ✓	✗ / ✓	✗ / ✓		100 x 435 x 275	3.4	Japan	2	749
✓ / ✓	✗ / ✗	✓ / ✓	Zoom	90 x 430 x 295	3.1	Korea	1	529
✓ / ✓	✗ / ✓	✗ / ✓		85 x 430 x 275	3.0	Japan	1	629
✓ / ✓	✓ / ✓	✓ / ✓	Zoom (E)	90 x 435 x 315	3.4	Hungary	1	599
✓ / ✓	✗ / ✓	✓ / ✓	Zoom	80 x 430 x 310	3.0	Japan	1	599
✓ / ✓	✓ / ✗	✗ / ✓	(F)	100 x 430 x 280	4.2	China	2	999

* *Prices shown are a good target to aim for when shopping around, based on nationwide checks in late 2000.*

(A) *Silver model has SCART connection; black model doesn't.*

(B) *Only partial lock.*

(C) *Can't unlock without pin.*

(D) *SCART connector for audio/video in/out.*

(E) *3D surround sound, SCART connector for audio/video input.*

(F) *Search function has sound.*

1 Overall score

The overall score is a combination of the following:
Picture quality: 25%
Sound quality: 20%
Ease of use: 25%
Versatility: 10%
Error correction: 15%
Environment: 5%.

2 Picture quality score

Picture quality was measured with standardised tests and a trained user panel.

3 Sound quality score

Sound quality was tested for all four current audio formats (PCM, AC3, MPEG-2, DTS), using standardised tests and a listening panel.

4 Ease of use score

Five users rated each product out of 5, according to how good its instruction manual is, and whether they could set up, operate, program and use the DVD play function. Their scores were averaged and converted to a percentage.

5 Versatility score

This rates the number of features the player has; a higher score indicates more features.

6 Error correction score

Faulty disks and a range of standardised bumping and shaking tests were used to measure how well the players could cope with faulty disks and movement.

7 Environment score

This includes power consumption on standby, and whether the components can be recycled. All the models use less than 3 W on standby, which is pretty good. The **SONY** and **DENON** both use 0 W on standby, but while the **SONY** can be turned on using the remote when it's in 0 W standby mode, the **DENON** can't.

8 Childproof lock

Can prevent playback of disks or scenes.

9 Disk repeat

Does the player have a disk repeat function for DVD and CD? It's most useful for CDs, but some players also have it for DVDs, so you could repeat a single 'chapter', or the whole movie. All players can repeat a single DVD chapter or CD track.

10 Plays CD-R/CD-RW disks

If you make your own CDs, say on your computer's CD-R or a stereo system with the appropriate equipment, being able to play them in your DVD player is a bonus. Only two models here can, although quite a few can play CD-RW disks (see *What to look for*, page 34, for more on CD-R and CD-RW).

11 Programmable DVD/CD

This lets you replay a selection of sections/tracks in any order, with repeats.

VIDEO OF THE FUTURE

DVD is possibly the most popular consumer electronics device ever. Sales of DVD players doubled in the US last year, and show no signs of slowing. But DVD is just the tip of the iceberg when it comes to digital gadgets.

Digital VHS is a possible replacement for VHS tapes, with high resolution and high-definition recording — it won't be available at reasonable prices for a couple of years, though.

Digital video recorders (DVR) are available in the US now, and should head to Australia soon. They're like a combined computer and DVD in one — with a digital recorder (like a computer hard drive) inside the box. You wouldn't be able to swap taped programs with friends, but you could store them for as long as needed and, unlike with a VCR, you could also watch one recorded program and record another at the same time or watch the beginning of a program while still recording the end.

Recording DVD is much harder than recording to VHS tape, so we may not see any reasonably priced home-recordable DVD in the near future. Digital camcorders have similar problems — but some models have started to incorporate recordable CDs as their storage format. You could potentially play those CDs in your DVD player, as long as it can play recordable CDs. When DVD-recordable is standardised, a DVD-recordable camcorder will look like a better option.

Digital TV is already here — see page 22.

ALL PICS: RHONDA THWAITE

SAVING with a dishwasher?

A dishwasher can save you energy, water and money, but you'll have to choose carefully.

IN A NUTSHELL

- **The AEG Öko Favorit 6081** *scored well across the board. Others performed well in most scoring categories, but none could match its water efficiency and ease of use.*
- **Before you buy,** *check that your dinnerware will fit — most models on test have trouble fitting in tall glasses and large dinner plates at the same time. Take one of each to the shops with you.*

If you use hot water to soak your pots, pre-rinse your dirtiest items, hand wash and post-rinse a typical day's worth of dirty dishes, you'll be using approximately 55 litres of water and about 1.98 kWh of energy to heat it (excluding your physical labour, of course). Compared to an efficient dishwasher, hand washing this way uses three and a half times the amount of water and significantly more energy. You'd be paying 70% more on water bills and about 40% more on energy bills, costing you about $40 more each year.

On the other hand, if you don't bother soaking, pre-rinsing or post-rinsing, but just wash in warm soapy water, you'd be using about 20 L of water and only 0.47 kWh of energy — a 66% saving in energy costs, but still 25% more than the dishwasher for water usage — though cheaper than a dishwasher overall by about $40 a year.

But a lot of people who use a dishwasher rinse the dishes first, which doubles the water usage and cost, making it a less efficient option. Just scrape the food off — our tests show that today's dishwashers can cope with this level of soiling. Try it to see if *your* dishwasher can do a good job — it may save you time and money.

And if you're in the market for a new dishwasher, the models in the *What to buy* list can certainly cope with the vast majority of dirty pots and plates without pre-rinsing.

WHAT TO BUY

Top performer

AEG Öko Favorit 6081	$1678

Best Buys

FISHER & PAYKEL Nautilus 920	$949
WESTINGHOUSE Freestyle SBg20WH	$899
DISHLEX Global DX300	$949

All the models in the *What to buy* list scored well for washing and drying, but the **AEG Öko Favorit 6081** is well ahead of the rest for ease of use and water efficiency.

The three Best Buys, however, are a lot cheaper to buy and also have reasonable running costs.

Profiles

The models profiled are those in the *What to buy* list; their scores are detailed in the table on page 42. Prices shown are a good target to aim for when shopping around, based on nationwide checks in January 2001. Anything lower is a bargain.

TOP PERFORMER

AEG ÖKO FAVORIT 6081

Target price: $1678

Good points

- Comparatively cheap to run.
- Comparatively quiet.
- Fits larger plates and champagne flutes at the same time.
- The height of the right side of the top basket can easily be adjusted, meaning you can, say, make space for large items at the bottom on the right side while loading tall glasses at the top on the left.
- Easy to use controls and remove and replace the filter.
- Has a water-softening system that may be useful in hard-water areas.
- Fault display helps avoid unnecessary service calls.

- Plate racks in the bottom basket are removable, to fit large pots easily.
- Has an anti-flood device.

Bad points

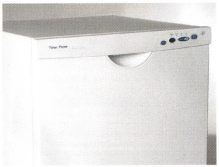
- No child safety features.
- The most expensive in the test to buy.

WHAT ABOUT THE REST?

- The **BOSCH, ARISTON, MIELE** and **ASKO** all have good all-round scores, except for the **BOSCH**'s 50% for energy efficiency. We couldn't fit large plates and bowls side-by-side without touching in the **BOSCH** and **MIELE**, and in the **ARISTON** the bottom basket rubs against the door seal when sliding in and out, which is likely to damage the seal. All but the **BOSCH** have comparatively cheap running costs, and if you found any of the four at a good price you'd probably be happy with them.
- The **WHIRLPOOL** scored only 52% for energy efficiency, and it didn't rate quite as well as the above four models for drying and ease of use. Our large plates and tall glasses don't fit, and it's also towards the higher end for running costs.
- The **SIMPSON, BRANDT** and **TECHNIKA** all got very low scores for energy efficiency, which turn into comparatively high running costs. The **TECHNIKA** also uses almost twice as much water as any other machine in the test, and is the noisiest on its 'normal' cycle. The **BRANDT**, though, is easy to use.

For more details on these models check our online **Compare A Product** feature — see page 41.

BEST BUYS



FISHER & PAYKEL NAUTILUS 920

Target price: $949

Good points

- Easy to use controls and very easy to remove and clean the filter.
- The controls have a child lockout mode.
- Fault display.
- Plate racks in the bottom basket are removable, to fit large pots easily.
- Has an anti-flood device.

Bad points

- The top basket isn't height-adjustable.
- Champagne flutes don't fit.
- Large plates and bowls can't be placed side-by-side without touching.

WESTINGHOUSE FREESTYLE SB920WH

Target price: $899

Good points

- Easy to remove and clean filter.
- Plate racks in the bottom basket are removable, to fit large pots easily.

Bad points

- Not as quiet as some others.
- Champagne flutes don't fit.
- Large plates and bowls can't be placed side-by-side without touching.
- No anti-flood device.

DISHLEX GLOBAL DX300

Target price: $949

Good points

- Easy to remove and clean filter.
- Plate racks in the bottom basket are removable, to fit large pots easily.

Bad points

- Not as quiet as some others.
- Champagne flutes don't fit.
- Large plates and bowls can't be placed side-by-side without touching.
- No anti-flood device.

Hot or cold water?

- *Want to connect your dishwasher to hot water to take advantage of off-peak or solar hot water? You may need a tempering valve to reduce the temperature. Higher than recommended inlet water temperatures can shorten the lifespan of the inlet valves.*
- *Only four machines in this test can handle temperatures of 70°C or higher — the **ASKO** (80°C), **FISHER & PAYKEL** (75°C), **WESTINGHOUSE** and **SIMPSON** (70°C). For the rest, 60°C is the maximum temperature recommended, except for the **DISHLEX** at 65°C.*
- *Consider connecting your dishwasher just to cold water: it increases the number of programs you can use effectively and efficiently, and the type of items you can wash. For example, you may not be able to wash some heat-sensitive items in your dishwasher if it's using 60°C water. And connecting only to hot water may give a faster wash, but not necessarily a better one.*

FOR PEOPLE WITH A DISABILITY

An occupational therapist from the Independent Living Centre assessed the dishwashers for ease of use by people with a disability.

- If you have problems with your hands or wrists, look for a light door with a latch that's easy to open and close, controls that are easy to turn and press, baskets that slide in and out easily and a filter with handles. The **DISHLEX, ASKO** and **MIELE** meet these requirements.
- If you're vision-impaired, look for controls that are easy to read (large, well-spaced), with labels in a contrasting colour. Positive feedback such as lights and/or beeps and other tactile, audio and visual feedback are helpful, as are well-defined baskets. The **AEG** has well labelled controls and good baskets.
- For the intellectually impaired, the **BRANDT** is recommended because of its simple controls, although it's expensive both to buy and run.

DANGERS OF DISHWASHER DETERGENT

Alkaline salts are up to 95% of a typical dishwasher detergent. They help the cleaning process by reacting with the fats on the dishes, but they're what makes this type of detergent dangerous if swallowed, as they have a corrosive reaction in your mouth and throat.

Most of their cleaning performance is due to their very high pH that dissolves away dirt, but which also, over time, strips away glazes on crockery and wears away glassware, making it cloudy-looking and scratched.

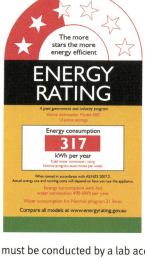
Some of the alkalis include **sodium carbonate** and **sodium metasilicate.** The latter is particularly caustic and dangerous if swallowed — and it's up to 65% of some detergents.

Other dishwasher detergent ingredients include:

- **Surfactants:** Only around 2% of the detergent, they work by lowering the surface tension of the water so it better wets the dishes to loosen dirt and keep it suspended in the water — not back on the crockery.
- **Chlorine or oxygen bleaches:** These help break down protein remnants and aid in removing tea and coffee stains, but powders containing chlorine can make your plastic kitchenware deteriorate.
- **Enzymes:** Enzymes break down protein and starch-based stains such as egg, pasta and cereal. They produce good wash results at lower temperatures, which is better for your crockery and glassware — detergents containing enzymes work best at temperatures around 40–55°C, above which their effectiveness drops off sharply.
- **Corrosion inhibitors:** Some detergents might include these to minimise corrosion of metal pots and cutlery, and the dishwasher.

Most dishwashers also use a **rinse aid,** which lowers the surface tension of the rinse water so it easily runs off the dishes, taking any dirt with it, and also improves drying results.

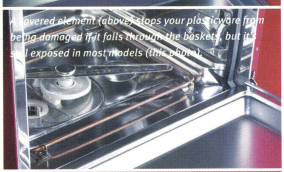
Energy rating labels



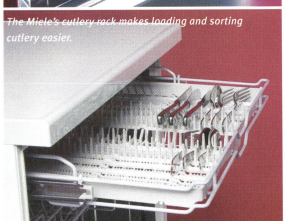
Energy rating labels (star ratings) should allow you to choose energy-efficient appliances but, because of the way they're tested for the rating, you can't always directly compare models. In our tests using the 'normal' program, models with a good star rating didn't necessarily have the best energy efficiency.

This is because manufacturers can choose any program for the label that meets the minimum cleaning requirements. So you'll need to read the fine print to check which program the dishwasher was tested on — which may well be different from another model you're trying to compare it with.

What's more, manufacturers can currently test their own products for energy label certification, rather than having it done by an independent lab. This will change, though: as of October 1, 2004, tests for certification must be conducted by a lab accredited by the National Association of Testing Authorities, Australia (NATA). It's a step in the right direction, but will still allow manufacturers to test their own products if their lab is NATA-accredited. And although regulatory authorities do regular check-testing, CHOICE still thinks independent NATA-accredited lab testing is in the best interests of consumers.



A covered element reduces stops your plasticware from being damaged if it falls through the basket, but it's still exposed in most models (like mine).



The Miele's cutlery rack makes loading and sorting cutlery easier.

The AEG's half-height adjustable basket is useful.

What to look for

The main aspects include: a good energy rating (but see below left); the space you have, allowing for ventilation and installation; whether your large plates and glasses will fit; if the filter is easy to remove; hot- or cold-water connection (see far left); and availability of the programs you'll want to use. (If you want to use enzyme-based detergent, for best results look for a 'bio' program or an economy program that washes at around 50°C — see *Dangers of dishwasher detergent*, left, for more.)

Limited space?

Consider a **slimline** dishwasher or a **compact** model that can be placed on a benchtop or built-in (none in this test).

The **WESTINGHOUSE, SIMPSON**, and **DISHLEX** models have a **mobile** conversion kit, so you can wheel the dishwasher up to the sink when you need to use it.

Useful features and innovations

Look for **height-adjustable baskets** and **removable plate racks** for more versatility. The **ASKO** has neither, the **FISHER & PAYKEL** doesn't have adjustable baskets, and the **BENDIX** and **BOSCH** don't have removable plate racks.

Optional **anti-nesting** grids on the cutlery baskets (all in our test have them except the **WESTINGHOUSE, DISHLEX**, and **ARISTON**) or a **cutlery tray,** as in the **MIELE**. Our testers first thought the cutlery tray would be a chore to use, as you have to carefully position each item between the guides. But in fact they found it was easier to put the cutlery in without handling the dirty parts and, with a single scoop, pick up all 'like' cutlery, so it doesn't need sorting.

Child-safe detergent dispensers and door locks. None in this test has a child-safe detergent dispenser, but the **MIELE** and **ASKO** have a child-safe door lock.

A **hidden heating element** prevents items from being damaged if they fall through the basket, and food from being burnt onto the element and causing a bad smell. Models that have one include the **AEG, ARISTON, BOSCH, BRANDT** and **WHIRLPOOL**.

Anti-flood device: This activates the water supply valve and the drain pump if there's a water leak in the machine. The **AEG, ARISTON, ASKO, BOSCH, WHIRLPOOL, MIELE** and **FISHER & PAYKEL** have one.

A fault display, as on the **FISHER & PAYKEL** and **AEG**, helps you identify simple problems, such as an empty rinse aid dispenser or blocked spray arms, and avoid unnecessary service calls; or warns you of a serious problem that does need a service call.

Fan-assisted drying can improve drying by removing condensation from inside the dishwasher. Only the **AEG** has it in this test.

Half-load option or **load-sensing**: The latter adjusts the water and program times according to the number of items and dirt in the dishwasher, allowing you to wash smaller loads economically. The **AEG** has load-sensing, but none tested has a half-load option.

Look for a **salt dispenser** for softening the water if you live in an area with hard water. Only the **ARISTON, MIELE** and **AEG** have this feature.

PC update: If new technology offers improved performance, a service engineer can upgrade your machine's capabilities via a notebook computer, so you and the environment benefit. (None in this test.)

COMPARE A PRODUCT

COMPARE A PRODUCT

To compare all features and results of the models we've tested — plus the features of those we haven't — go to **www.choice.com.au**. *Type 'dishwashers' in the search box, click on 'Dishwashers (premium)' from the list, and then follow the login procedure. If you're a CHOICE subscriber and haven't yet registered for free trial access to the website, call our Consumer Services on (02) 9577 3399 and have your email address ready.*

Dishwashers

Brand / model (in rank order)	PERFORMANCE NORMAL CYCLE 1 Overall score (%)	2 Washing score (%)	3 Drying score (%)	4 Ease of use score (%)	5 Energy efficency score (%)	6 Water efficiency score (%)	7 Running cost ($/10 years)	Energ used (kWh)
AEG Öko Favorit 6081 **(A)**	85	82	94	90	76	84	695	1.40
BOSCH SGS4332AU	78	90	83	77	50	67	873	1.74
ARISTON LS 2050 A	77	78	81	73	73	77	722	1.43
ASKO D1606	77	77	86	70	68	77	752	1.50
MIELE G641SC	77	70	94	75	76	74	708	1.39
FISHER & PAYKEL Nautilus 920	76	80	75	68	75	74	719	1.42
WESTINGHOUSE Freestyle SB920WH	76	83	77	68	61	79	792	1.59
DISHLEX Global DX300	75	81	67	70	81	69	687	1.33
WHIRLPOOL 6ADP951	71	77	77	65	52	70	858	1.71
SIMPSON Silencio 52B850WH	70	77	75	73	39	73	932	1.88
BRANDT DW10	62	64	62	82	41	64	936	1.86
TECHNIKA Ardo LPA96	61	79	71	68	24	30	1085	2.09

SIMILAR MODELS

The following models would score the same for performance as the models we tested (in *italics*), but some may be slightly different for ease of use because of different layout or controls.

- *AEG 6081:* **AEG 6281i, AEG 60750VI.**
- *BOSCH SGS4332AU:* **BOSCH SGI4335AU.**
- *ARISTON LS 2050 A:* **ARISTON LS V67.**
- *ASKO D1606:* **ASKO D1706.**
- *MIELE G641SC:* **MIELE G641SCi, MIELE G641, MIELE G641i.**
- *WESTINGHOUSE Freestyle SB920WH:* **WESTINGHOUSE 921.**
- *DISHLEX Global DX300:* **DISHLEX Global DX450, DISHLEX Global DX500.**
- *WHIRLPOOL 6ADP951:* **WHIRLPOOL 6ADP962WHM, WHIRLPOOL 6ADP962IXM, WHIRLPOOL 6ADG952**
- *SIMPSON Silencio 52B850WH:* **WESTINGHOUSE 905.**
- *BRANDT DW10:* **BRANDT DW7.**
- *TECHNIKA Ardo LPA96:* **TECHNIKA Ardo LPA97.**

HOW RELIABLE HAVE SUBSCRIBERS FOUND THEM?

We asked a group of subscribers whether their dishwasher had needed repairs in the previous 12 months, and whether they would buy the same brand again.

Around one in five dishwashers had needed repair, at an average cost of $105, making them a comparatively unreliable product. Control switches and pumps were the main problem areas. There was no difference between the number of repairs needed for machines with mechanical controls and those with electronic ones.

The graphs show the results for those brands for which we have more than 50 replies (the number in brackets indicates how many readers reported on each brand). Note that we don't have information for all brands on the market.

PERCENTAGE NOT NEEDING REPAIRS

Miele (128)	91
Fisher & Paykel (179)	87
Kleenmaid (110)	86
Westinghouse (91)	85
Bosch (102)	84
Simpson (347)	81
Asko / Asea (223)	76

PERCENTAGE WHO WOULD BUY THE SAME BRAND AGAIN

Miele (133)	96
Fisher & Paykel (192)	91
Asko / Asea (232)	89
Bosch (104)	86
Kleenmaid (109)	84
Westinghouse (92)	74
Simpson (352)	63

			FEATURES						SPECIFICATIONS			
			9 ECONOMY CYCLE									
ter d (L)	Time (min)	8 Noise (dB)	Drying score (%)	Energy used (kWh)	Water used (L)	Dimensions (H x W x D, mm) *	10 Water connection	Place settings	11 Type	Warranty (years)	Origin	Manufacturer / distributor	Target price ($)**
	90	47	96	1.19	12	850 x 600 x 610	H or C	12	FW, FI, SI	3	Germany	Andi-Co	1678
	97	46	73	1.47	21	850 x 600 x 610	C rec	12	FW	2	Germany	Bosch	1099
	103	52	84	1.13	12	850 x 600 x 610	H or C	12	FW, SI	5	Italy	Ariston	1399
	100	49	83	1.02	11	835 x 600 x 615	H or C	14	BI, FW, FI	2 (B)	Sweden	Asko	1299
	89	46	88	1.08	16	850 x 600 x 630	H or C	14	FW, SI	2	Germany	Miele	1299
	81	49	49	0.89	20	840 x 595 x 560	H or C	12	BI	2	NZ	F&P	949
	89	54	49	0.89	18	820 x 600 x 630	H or C	12	BI, M	1	Australia	Electrolux	899
	94	52	39	0.97	22	820 x 600 x 620	H or C	12	BI, SI, M	2 (C)	Australia	Electrolux	949
	98	49	76	1.45	17	845 x 600 x 630	H or C	12	F, FW, FI	2	Germany	Whirlpool	999
	89	53	51	1.05	20	820 x 600 x 630	H or C	12	BI, M	1	Australia	Electrolux	749
	88	46	76	1.39	24	850 x 600 x 620	C rec	14	FW	5	France	Kleenmaid	1369
	79	58	46	1.10	36	855 x 595 x 620	C	12	FW, SI	2	Italy	Technika	799

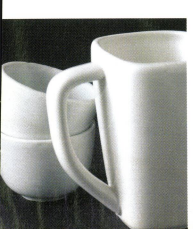
* *Dimensions (rounded up to the next 5 mm) are for the smallest 'box' that could be placed around the machine, allowing for inlet and drain hoses. It's best to leave extra space around the machine for easy installation and air circulation.*

** *Prices shown are a good target to aim for when shopping around, based on nationwide checks in January 2001.*

(A) *The manufacturer says this model will be discontinued in July.*

(B) *10 years parts and labour for all stainless steel; 20 years for PEX inlet safety hose.*

(C) *10 years parts and two years labour for stainless steel interior.*



1 Overall score

The overall score is a combination of the washing, drying, energy efficiency and water efficiency scores for the 'normal' wash program, along with ease of use, weighted as follows:

- Washing score: 40%
- Drying score: 20%
- Ease of use: 10%
- Energy efficiency score: 15%
- Water efficiency score: 15%

2 Washing score

We assessed how well the machines could remove food such as dried-on spinach, egg yolk, baby cereal and tea stains, without the items being rinsed first. (Our scoring is based on the current Australian standard — a slightly different method from our last dishwasher report, when we tested to the previous Australian standard.)

3 Drying score

This reflects how dry the dishes were 30 minutes after the 'normal' cycle finished. During that time the door was left closed or, if recommended by the manufacturer, slightly ajar.

4 Ease of use score

This reflects the ease and versatility of loading and unloading, with a focus on awkward items, such as larger than standard dinner plates and tall glasses. We also looked at how easy it is to remove and clean the filter.

5 Energy efficiency score

This is based on the amount of energy used by the dishwasher on the 'normal' program. The less energy used, the higher the score.

6 Water efficiency score

This is based on the amount of water used by the dishwasher on the 'normal' program. The less water used, the higher the score.

7 Running costs

This is an estimate of how much it'll cost you over 10 years (the average life of a dishwasher) for water and electricity if you wash one full load every day using a 'normal' cycle. The calculations are based on 12.5 cents per kWh for electricity and $1 per 1000 L for water. (For simplicity, we've excluded depreciation and any interest costs, as well as the cost of detergent — people use different amounts and the price varies considerably between brands.)

8 Noise

These are the maximum noise levels recorded during the 'normal' program, measured 1 m away from the machine and 1 m above the ground. You'd be aware of all these dishwashers in the background.

9 Economy cycle

We checked the drying effectiveness and water and energy efficiency to compare with the 'normal' cycle. While all the machines use less energy on economy, five (the **WESTINGHOUSE, FISHER & PAYKEL, DISHLEX, SIMPSON** and **TECHNIKA**) get a much lower drying score, and six (the same five plus the **BRANDT**) use the same amount of water.

10 Water connection

H or C: You can connect the dishwasher to either hot or cold water; see page 40 for the pros and cons of connecting to hot water.
C rec: The manufacturer recommends connection to the cold tap.
C: Connect to the cold tap only.

11 Types available

FW: Freestanding, with worktop
F: Freestanding, no worktop.
BI: Built-in (some may not have side, top or back panels).
FI: Fully integrated (built-in, with decor panels from top to bottom — you have to open the door to access controls).
SI: Semi-integrated (built-in, with decor panels, but controls showing).
M: Mobile kits are available for these models.

Electric oil-filled column heaters are relatively safe and getting faster at heating up.

FAMILY-FRIENDLY HEAT

IN A NUTSHELL

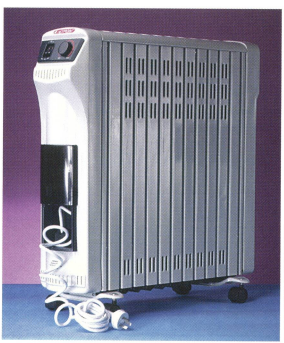
- **Column heaters** *are fine for heating small to medium-sized rooms over a long period, but they take some time to warm the room up. Models with a timer you can set to start heating before you want to use the room are useful.*
- **A model with a fan** *(such as the* ***DELONGHI Radia*** *in this test) distributes the warm air more evenly around the room.*

THERE'S OIL INSIDE THE HEATER'S columns (or 'fins'), and when you switch the power on it warms up. The heat is gradually transferred to the metal casing, circulating hot air around the columns or, if they're enclosed, ducting the air straight up. Now you can also get fan-boosted models, which blow the heated air into the room.

Column heaters are relatively safe for children and older people and need minimal maintenance or cleaning. They're quiet and they don't produce fumes inside your home (though they contribute to air pollution if the electricity used to run them is generated in power plants that burn fossil fuels).

Their heating capacity is limited to 2.4 kW, so they're suitable for bedrooms and small to medium living areas, with their effectiveness largely dependent on climate and your home's insulation. With or without a fan, column heaters still aren't fast to heat up, so they're more appropriate for rooms that need heating over long periods, rather than for someone who wants to feel an immediate, direct blast of warm air.

The best model in this test, the **DELONGHI Radia RD2400TF**, has a 'turbo-heating' feature separate from the heating columns: a fan and an extra heating element in the control panel that blows heated air into the room. This heater gets the best scores for heating speed, heat distribution and maintaining a set average temperature if you actively manage the heating — turn the fan off once the room is heated, then back on if you start to feel chilly. This way you avoid constant fan noise too.



Our test showed that it doesn't make a difference to heating performance if a column heater's fins are enclosed, like this one, or exposed, like traditional models.

ALL OTHER PHOTOS: VANESSA MARSHALL

WHAT TO BUY

DELONGHI RADIA RD2400TF	$269
DELONGHI RAPIDO RAP2400T	$399
HELLER H24T	$169
SUNAIR SA-2412T	$149
EWT NOC1104TLT	$189
HOTPOINT HPF-12	$189

BRONISA TYMKIW

NG

WHAT ABOUT THE REST?

- *The **MISTRAL Heat Zone MBCH10/2400T** scored the lowest for heating performance: the thermostat keeps the average temperature well, but heating speed is slow and heat distribution is the most uneven of all the tested models.*
- *The **OMEGA Fuego 2FU2412** and the **MISTRAL MCH-11/2400T** scored well for heating performance but aren't as easy to use as the other models. The **OMEGA** has a fan, which boosted heating performance a bit, but its controls are poorly marked and somewhat difficult to access, and it's difficult to clean. The **MISTRAL's** timer is difficult to set, its cord storage facility is divided across the middle, making it difficult to pack away the cord, and the controls aren't easy to read or set.*

Profiles

The heaters are in rank order from top to bottom, left to right. Prices shown are recommended retail, according to information provided by manufacturers. See the table for which features they have.

DELONGHI RADIA RD2400TF

RRP: $269

GOOD POINTS

- The 'turbo' heating feature heats a room rapidly and evenly.
- Controls are easy to read and set, and there's cord storage.

BAD POINTS

- The fan is a bit noisy.
- Without turbo heating it's fairly slow to warm up the room and has relatively uneven heat distribution.

DELONGHI RAPIDO RAP2400T

RRP: $399

GOOD POINTS

- Fast warm-up time.
- Maintains a set average room temperature quite well.
- Controls are easy to read and set, there's good cord storage and it's easy to clean.

BAD POINTS

- Relatively uneven heat distribution.
- Most expensive model in the test.
- An extra heating element, which probably contributes to the heater's high price, didn't make it perform better. The warm-up time with the 'instant heat' feature turned on was slightly slower than with it switched off.

HELLER H24T

RRP: $169

GOOD POINTS

- Maintains a set average room temperature well.
- Relatively even temperature distribution.

BAD POINTS

- None to mention.

SUNAIR SA-2412T

RRP: $149

GOOD POINTS

- Best at maintaining a set average room temperature.
- Plug sockets are moulded into the cord storage cradle to keep the plug tucked away as well as the cord.

BAD POINTS

- The power cord is only 2 m long. See *What to look for*, page 46, for more on this.

EWT NOC1104TLT

RRP: $189

GOOD POINTS

- Fairly even temperature distribution.
- Clip-on plastic towel rail.
- Timer cover and cord storage cover — which may be a nuisance for people with hand or eye disabilities, but are good for discouraging children from playing with the controls.

BAD POINTS

- The thermal cutout didn't switch the heater off in our towel test, but there was no damage to the heater or towel.

HOTPOINT HPF-12

RRP: $189

GOOD POINTS

- Relatively fast warm-up.
- Controls are easy to read and set, and it's easy to clean and move.
- Has a humidifier tank, but no markings or instructions for its use are included (see *What to look for*).

BAD POINTS

- Relatively uneven heat distribution.
- Failed the stability test (see the table) so it's not the best choice if stability is important — for example, if your household includes small children.
- No timer.

Brand / model (in rank order)	PERFORMANCE 1 Overall score (%)	2 Heating score (%)	3 Ease of use score (%)	4 Stability test	5 Towel test	FEATURES 6 Built-in timer	7 Anti-freeze feature	8 Tilt switch	9 Enclo columns
DeLONGHI Radia RD2400TF **(A)**	77	79 **(C)**	71	Pass	Pass	✓	✓	✓	**(J)**
DeLONGHI Rapido RAP2400T	74	73 **(D)**	78	Pass	Pass	✓	✓	✓	✓
HELLER H24T	73	75	68	Pass	Pass	✓	✓		
SUNAIR SA-2412T	72	73	69	Pass	Pass	✓	✓	✓	
EWT NOC1104TLT **(B)**	71	73	66	Pass	**(G)**	✓			
HOTPOINT HPF-12	71	70	72	Fail **(F)**	Pass				✓
MISTRAL Heat Zone MBCH10/2400T	66	63	73	Pass	Pass	✓			✓
OMEGA Fuego 2FU2412 **(A)**	65	70 **(E)**	54	Pass	Pass	**(H)**	✓		
MISTRAL MCH-11/2400T	63	68	50	Pass	Pass	✓		✓	

The Mistral Heat Zone's (above) humidifier tank can be filled with water that evaporates and helps maintain the room's humidity; the Hotpoint has one too. The Delonghi Radia's fan improves room heat-up (see right).

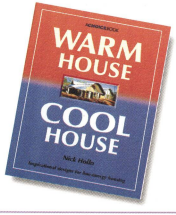
What to look for

- **Thermostat:** This maintains a desired average room temperature, and should have a control that's easy to read and set. All the tested models have one.
- **Settings:** Look for at least three heat settings to cope with different heating requirements. All the tested models have three except the **DELONGHI Rapido**, which has four.
- **Columns:** Some models have exposed columns, while on others they're partly or fully enclosed. The test results show this doesn't seem to make any difference to heating performance, so it's a case of which look you prefer.
- **Fan:** May improve heat-up speed and heat distribution, but a fan is likely to be quite noisy, so make sure it can be switched off. The **DELONGHI Radia** (left) and **OMEGA** have one.
- **Timer:** This feature is useful because these heaters aren't fast. A timer can be set, for example, to turn the heater on before you get home. See the table for which heaters have one.
- **Anti-freeze feature:** This is claimed to maintain a temperature of about 5°C if the thermostat is left on its lowest setting, avoiding frost. (We didn't test this feature, but the table lists which models have it.)
- **Towel rail:** A clip-on towel rail can be useful for drying washing or towels.
- **Cord length:** Look for a length of 2.6 m or more if you want to move the heater around, as they're not supposed to be used with an extension cord — it may get hot and pose a fire hazard.
- All the tested models with exposed fins — except for the **MISTRAL MCH11/2400T** — have a **dummy end fin** opposite the controls, designed so that both ends are safe to touch.

OTHER WAYS TO HEAT YOUR HOME...

Go to www.choice.com.au and type 'heating options' in the search box to read about a range of heating methods plus find a database of all the electric heater models currently on the market. If you're a current CHOICE subscriber you can get free trial access to our website; just call Consumer Services on (02) 9577 3399 and have your email address ready. If you don't have Internet access, see CHOICE, April 1999, or phone us on the above number and we'll send you a copy of the article.

You can find more ideas on heating (and cooling) your home efficiently in the CHOICE Book Warm House Cool House. *It's in the book catalogue you received with this issue.*



ECIFICATIONS

mensions x W x D; mm)	Weight (kg)	Cord length (m)*	Warranty (years)	Manufacturer / distributor	Origin	Price ($)**
0 x 560 x 220	19.8	2.7	2	Parex	Italy	269
2 x 692 x 245	22.2	2.7	2	Parex	Italy	399
8 x 685 x 260	21.2	2.8	2	GAF	Austria	169
0 x 545 x 245	17.1	2.0	2	GAF	China	149
0 x 570 x240	16.9	2.8	2	Hagemeyer	Turkey	189
2 x 630 x 240	18.2	2.7	2	CEG	China	189
0 x 585 x 220	18.4	2.9	3	Mistral	Spain	300
5 x 572 x 220	21.1	2.8	2	Omega	Italy	285
0 x 595 x 235	18.2	2.6	2	Mistral	Italy	180

* *Rounded to the nearest 10 cm.*

** *Prices are recommended retail, according to manufacturer information.*

(A) *This model has a fan.*

(B) *Similar to the Dimplex RD2411TI. Also available with a turbo fan as the EWT NCO1105TLGT (which is similar to the Dimplex RD2411TIF).*

(C) *With 'turbo heating' switched on. Heating score in switched-off mode: 65%; overall score: 67%.*

(D) *With 'instant heat' switched on. Heating score in switched-off mode: 75%; overall score: 76%.*

(E) *With fan switched on. Heating score in switched-off mode: 66%; overall score: 63%.*

(F) *Only just failed (15° is the pass/fail cutoff and it fell over at that point).*

(G) *The thermal cutout didn't switch the heater off during the towel test. However, there was no damage to the heater or the towel.*

(H) *Models with timer available: 2FU2412T12 (12-hour timer; $309) and 2FU2412T24 (24-hour timer; $335).*

(I) *Partially enclosed.*

1 Overall score

The overall score is a combination of heating performance and ease of use, weighted as follows:

- Heating: 70%.
- Ease of use: 30%.

2 Heating score

The heaters were tested in a thermal comfort laboratory, a room measuring 4.9 m by 3.5 m with an insulated ceiling (height 2.4 m), and their heating ability was evaluated against a constant outside temperature. To assess how well they heat, we tested the following, weighting each score as a third of a model's total heating performance:

- Heating speed: How long each heater took to raise the room temperature by 5°C.
- Heat distribution: How evenly the model heated the room.
- Thermostat performance: How well the model's thermostat managed to maintain a selected average room temperature, regardless of how evenly the heat was distributed, combined with the cycle time, to see how long it'd take to achieve the result.

3 Ease of use score

To evaluate how easy the heaters were to use, we assessed the following:

- Controls: 20%.
- Mobility: 20%.
- Cord storage: 20%.
- Cleaning: 20%.
- Markings: 20%.

4 Stability test

The heaters passed this test if, when gradually tilted, they didn't fall over at an angle of 15° or less.

5 Towel test

In this test, a towel is draped over the heater while it's turned to its highest setting, simulating what could happen if a towel or clothing were accidentally dropped or left on it. Ideally, a thermal cutout should protect the heater from being damaged, and the towel from catching fire. The EWT technically failed the test as the thermal cutout didn't switch the heater off, but there was no damage to the heater or towel.

6 Built-in timer

See *What to look for*, left, for more on this.

7 Anti-freeze feature

See *What to look for.*

8 Tilt switch

This safety feature is designed to switch the heater off if it's tipped over.

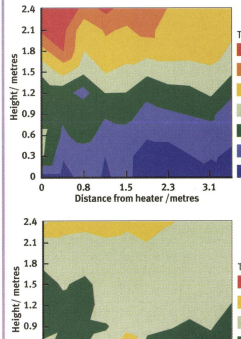
9 Enclosed columns or fins

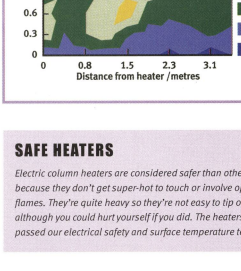
See *What to look for.*

STILL GOT COLD FEET?

Are your feet still cold when your heater's on? These temperature distribution graphs show differences in evenness of heating between models — basically, the level of comfort provided by each heater. It illustrates the **DeLONGHI Radia**'s results (bottom) with the fan switched on: nicely churned warm air without many cold patches. The other results are from the **MISTRAL Heat Zone** (top) but are typical of all the tested models except the **DeLONGHI Radia** with the extra heating element switched on. They show bright patches of hot air near the ceiling (where it's fairly useless) and cold air on the floor, indicating uneven heat distribution.

TIP: Turning a ceiling fan on to its reverse setting distributes the heat around the room faster (cold air is drawn up and warm pushed down).





GRAPHS: CONSUMER MAGAZINE

SAFE HEATERS

Electric column heaters are considered safer than other kinds because they don't get super-hot to touch or involve open flames. They're quite heavy so they're not easy to tip over, although you could hurt yourself if you did. The heaters all passed our electrical safety and surface temperature tests.

RECALLS & BANS

If you find a recall or ban not on our list, please let us know. Companies often rent 1800 numbers for a couple of months after the recall is announced. If the number given is no longer operating, phone the manufacturer or retailer direct.

THE PRODUCT: Woolworths has recalled **240 mL Luv n' care Gripper-Pal bottles** featuring a clown character, sold since October 2000 from the following supermarkets and stores: Woolworths supermarkets in NSW, ACT, Queensland, SA, WA and the NT; Safeway supermarkets in Victoria; Purity and Roelf Vos supermarkets in Tasmania; and from Crazy Prices stores in NSW, Victoria, Queensland and SA.
The problem: The nose on the clown character may detach from the bottle, posing a potential hazard to young children.
What to do: Return it to any of the above stores for a refund. For further information call Woolworths' Customer Service on 1800 101 020.

THE PRODUCT: Kmart has recalled **two Easter bunny plush toys** sold since mid February 2001 — a 28 cm sitting rabbit with a flower that comes in orange, green, pink and blue (keycode 37077341); and a 24 cm rabbit with a satin ribbon available in lemon, blue or pink (keycode 37077273). The keycodes are located on the tag attached to the toy.
The problem: The flower attached to the 28 cm rabbit toy, and the eyes on the 24 cm rabbit toy, may pose an ingestion or inhalation risk to young children.
What to do: Return it to your nearest Kmart store for a refund. For further information call 1800 634 251.

THE PRODUCT: Safcol has recalled **Asian Kitchen Tuna with Satay Sauce**, sold in 95 g tins.
The problem: The tins contain higher levels of aflatoxin than those allowed by the Australian Standard (aflatoxin is a carcinogen).
What to do: Don't eat it. Return the tuna to the place of purchase for a refund. For further information call Safcol on 1800 819 785.

THE PRODUCT: Dairy Farmers has recalled **1 L Black & Gold soy drink** with 2001 use-by dates of June 7, June 23, July 18 and August 10, and **1 L Sungold Soy Drink** with 2001 use-by dates of April 27, June 7, June 10, June 23, July 8, July 18, August 4 and August 10.
The problem: The soy drinks may contain traces of cow's milk.
What to do: Don't drink it if you're allergic to dairy products. Return to the place of purchase for a refund. For more information call Dairy Farmers on 1800 998 870.

THE PRODUCT: Breville has recalled **Capelli Steam Hair Straighteners** — model CS400.
The problem: A possible electrical problem means that, in certain circumstances, users of the straightener risk getting an electric shock.
What to do: Don't use it. Return it to the place of purchase for a refund. For further information phone the Breville Customer Service Centre on 1300 139 798, Monday to Friday, 9 am–5 pm (EST).

THE PRODUCT: Associated Lighting Distributors has recalled **Touch Lamps** — model nos KL-2100, KL-2101 and KL-2102, also sold under the brand names of **Lightstyles, Tiffany** and **Kanlite**, from Big W and Target stores since January 2000.
The problem: The lamps lack a necessary component to protect against electric shock.
What to do: Don't use them. Return to the place of purchase for a refund. For more information phone Associated Lighting Distributors on 1300 553 335 for the cost of a local call.

THE PRODUCT: Warner-Lambert has recalled **Infacol Wind Drops**, identified by batch nos 8819 and 8820, Aust R16124 and an expiry date of November 2003, and sold in 30 mL bottles.
The problem: The bottles may contain glass fragments.
What to do: Don't use it. Return it to the place of purchase for a refund, or call Warner-Lambert's customer service line on 1800 648 975, 8.30 am–5.30 pm (EST), or after hours on 1800 675 675, to arrange for the return of the product and a refund.

THE PRODUCT: Look Sharp Concepts has recalled **liquid-filled paperweights** or **bathroom accessories** identified as a translucent container filled with clear liquid sold from discount stores during November and December 2000, in NSW, Queensland and Tasmania.
The problem: The liquid inside the paperweights/bathroom accessories is flammable and poisonous.
What to do: Don't use them. Return to the place of purchase for a refund. For further information contact Look Sharp on (02) 9688 1900.

THE PRODUCT: Southcott has recalled **Hallmark** and **HMK bicycles**, models Outback DSR 2.4, Outback DSR 2.6, Escapade DSX3 and Integra FS, with serial numbers starting with OOH, OOI or OO). The bikes have a CS brand front-suspension fork and a front quick-release hub device, and were sold from November 3, 2000, to February 14, 2001.
The problem: Some of the bikes may have had front-suspension forks designed for standard-nutted front axles, whereas they should have had a retentive feature built in to the fork ends as a safety requirement in case the quick-release hub device becomes loose; so they may not comply with Australian Standard AS1927.
What to do: Return the bike to the place of purchase to determine whether it's affected and, if so, have the fork replaced free of charge. For more information call Southcott on (08) 8228 2451.

THE PRODUCT: Bromic has recalled a **RECA gas hose and regulator assembly**, sold as part of an LPG gas appliance such as a barbecue, heater or camping equipment since November 17, 2000. The RECA regulator is silver with a production date code of 'OO' surrounded by twelve dots. The ribbed beige gas hose is 600 mm long and marked MT Bromic 8 mm LP Gas AS1869-A-W.P;7kPa-AGA 4430-2000.
The problem: The hose may be faulty near the regulator end, which could lead to a gas leak.
What to do: Don't use it. Turn off the gas bottle and disconnect the regulator and hose from it. Phone Bromic on 1800 655 212, with the hose and regulator by you, to find out if it's affected. If so, you'll be sent a new hose and regulator assembly.

THE PRODUCT: Bromic has recalled **LPG Flexible Pig Tail Hose Assemblies**, black and marked on one side with: BROMIC/A 6.3 mm L.P. GAS AS/NZS1869 CLASS C-WP 2600 KPA AGA 5581 INSPECT REGULARLY REPLACE PERIODICALLY – mmyy (month year), and on the other side with: C.G.A. ACCUFLEX 478–04¼" I.D. L.P. GAS AND NAT.GAS HOSE ISSUE NO. xxxxx MAX. W.P.350 PSIG CANADA.
The problem: The hose may harden prematurely, which could result in a gas leak.
What to do: Don't use it. Contact Bromic on 1800 655 212 to determine whether it's affected and, if so, arrange for the hose assembly to be replaced free of charge. For further information call Bromic on the above number during business hours (EST) or leave a message.

THE PRODUCT: Land Rover Australia has recalled **Discovery Series II V8 vehicles**, built between August 1998 and April 2000, and **Range Rover vehicles**, built between September 1998 and May 2000, with the following VIN ranges — Discovery Series II: XA200611 to YA277051 and XA900000 to XA907212; Range Rover: XA410482 to XA443347.
The problem: The engine idler pulley might break, which could lead to loss of power-assisted steering, the electrical charging circuit, air conditioning and the cooling system.
What to do: Contact the Land Rover Australia Customer Response Centre immediately on 1800 625 642 to arrange to have the engine serpentine belt idler pulley replaced free of charge.

THE PRODUCT: The Reject Shop has recalled multi-coloured **foil confetti** sold in 2.5 ounce bags through Reject Shop stores in South Australia.
The problem: Foil confetti may pose a choking and ingestion hazard and is banned in South Australia.
What to do: If you bought the confetti in South Australia, return it to the Reject Shop for a refund. For further information contact The Reject Shop on (03) 9371 5555.

Weekly updates of recalls and bans are posted on the CHOICE website at www.choice.com.au. You can also email us any recalls or bans not on this list at ausconsumer@choice.com.au.

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If you're a current CHOICE subscriber you can get free trial access to the website. To register, just call us on (02) 9577 3399 and have your email address ready.

To whet your interest, here are some picks from the current information available at **www.choice.com.au.**

THE CHOICE ONE-STOP CAR SHOP

Want to buy, sell or check out a car? CHOICE Online gives members a unique collection of five interactive databases with information on the most important aspects to consider when buying a car — from prices and features to repair costs and safety.

On the home page, click on 'Toolkit' under Choice Cuts and go to the 'Cars and motoring' section.

- The *Used car safety rating* uses data from Monash University to show how much protection various models of used car gave their drivers in real-life two-car crashes; our database will provide you with safety details on specific models.
- *The cost of repairing your car:* Every year NRMA Insurance performs low-speed crash tests on new cars, assessing the difference between models in the price of spare parts and labour for repairs; get the details on specific models from our database.
- *ANCAP crash tests:* Australian motorist organisations, the Federal Office of Road Safety, and the road and traffic authorities in NSW, Queensland, SA and WA support the Australian New Car Assessment Program: popular new cars are crashed at fairly high speed to assess how safe they are and how well protected passengers are from serious injury. Our database provides you with details on specific models.
- Our *New car database* and *Used car database* (with data provided by Glass's Guide) let you choose *quick search* if you're looking to buy or sell a particular model; *detailed search* to help narrow down your choices, or *compare 2 models* to, say, try your Holden Commodore's virtues out against your mate's Mercedes. All three options also show prices, specs and what features are standard, optional or not available on the models.

MOBILE PHONES

Looking for a new mobile phone or buying one for the first time? Go to CHOICE Online and type 'mobile phone test' in the search box.

All the tested models are digital, and some of them come with WAP (click on *What's WAP?* for an explanation). Although you may have some model preferences, choosing one is likely to depend ultimately on what sort of plan you want, so click on *Choosing a call plan* for advice.

We tested the performance of 33 models and outline some common features. Fill in any preferences (regarding brand, sound quality, size, battery standby time, WAP capability, etc) to find a phone that meets your needs. Alternatively, you can look at the whole lot ranked in CHOICE's recommended order.

PLANNING A PLANE TRIP?

You've probably heard the scare stories about traveller's thrombosis (also known as deep-vein thrombosis (DVT) or economy-class syndrome) — type 'DVT' in the search box to check the facts.

Find out what it is, who's most at risk of developing it and a full list of travelling tips for planning your journey, checking in and while you're flying (including exercises).

Links are also included to other useful sites, such as CASA, Qantas and the Aerospace Medical Association.

HAIR DRYER TRIAL

Our user trial shows you can get a good hair dryer for under $50 — type 'hair dryers' in the search box for the report. *What to buy* lists the top three, which include one of the cheapest as well as the most expensive model. Click on *The best* for their individual profiles. *The rest* dried certain types of hair better than others or weren't very easy to use.

These days hair dryers have more accessories and features than you can poke a curling wand at. *What to look for* lists what extras are available and why you might want them. ■

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* indicates an update of a previous report, additions or corrections to reports, small follow-up items or letters. For space reasons, the index generally doesn't include Choice Cuts, many other small pieces, and Recalls and Bans.

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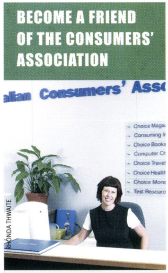

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"view the solar system from a safe distance"

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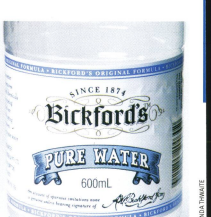
PEOPLE IN GLASS HOUSES SHOULDN'T THROW STONES ...

In March's *Hard Word*, we wrote 'Practice what you preach', which of course has the American spelling of the verb 'practise'. Thanks go to the three vigilant and patriotic readers who pointed it out — consider our wrists duly slapped!



RHONDA THWAITE

Would that be a bottle of molecules consisting of two hydrogen and one oxygen atoms?

$69

Breville Maxi Sandwich Press

- Extra large non-stick flat plate
- Adjustable height control
- Ideal for toasting Turkish and Focaccia bread

It stands to reason that a sandwich press would look like this ...

They say dieting only makes you fatter

At least this lot warns you in advance!

Announcing

THIS IS WHAT HAPPENS TO 96% OF PEOPLE USING THE B SLIM SYSTEM.

Before
Julie – was 59kg now 50kg

After

KID'S STUFF

An 11-year-old asked us how a bottle of fruit juice containing only 1% mango can be called 'orange and mango juice'. It's good to see at least one member of the next generation of consumers isn't going to take the inflated claims of manufacturers at face value.

HOW ABOUT A LITTLE HELP?

The hard word would like to thank all the readers who've responded with examples of outrageous ads, promotions and products. Thanks to the Bromage family, S Collinson, Y Cox, C Giles, D Kellet and C & O Moller for their contributions to this month's *Hard Word*. Please keep sending them in.

If you have any examples you think deserve to be on this page, send them to *The hard word*, CHOICE, 57 Carrington Road, Marrickville 2204, or email your suggestions to thehardword@choice.com.au.

A request from our art team: If you send us clippings, labels or packaging, please keep them as clean and neat as possible (and don't mark them with highlighters or pens or cut the corners off, etc) so we can reproduce them on this page. Thank you.